NATIONAL INSTITUTE
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DIRECTIONS

A safer municipality

The Safe Community operating model as a support for local safety planning

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Foreword

States have long ago given up the attempt to improve the safety of their citizens by government measures alone. Over recent decades, communities have assumed the responsibility for developing safety programmes that are based on local resources. Another participant in this work on safety is the third sector.

The need for collaboration on safety is based on the fact that, in the majority of the world's countries, the leading cause of death after the first year of life is an accident, violence or self-harm.

The first local safety programmes were born as part of the New Public Health movement. Initially, the programmes operated more by trial and error than by applying scientific methods or considering evidence. Like many other social movements, safety programmes gradually became more systematic, which eventually led to the creation of the Safe Community movement, among other things. After the first decade, the World Health Organization (WHO) incorporated the Safe Community operations as part of its programmes on the prevention of violence and accidents.

The Safe Community operations have since evolved into a global network. Over 300 communities have undergone a quality audit and have become a part of the global network of safe communities. These communities fulfil the jointly agreed criteria, and their purpose is to serve as an example for others. For more information, see www.ki.se/csp.

Of the Finnish municipalities, Hyvinkää is already a member of the network – and new municipalities and communities are welcome to join the network!

Leif Svanström
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Contents

Introduction

Safety is promoted by legislation and guidelines, but also by the actions of the authorities, municipal administrative sectors, communities, businesses, organisations, associations and citizens. Local work on safety and prevention of injuries involves several sectors and organisations. The improvement of safety is thus a common cause. Safety problems can be solved by several concurrent actions that have similar goals. Safety planning is not extra work, but rather an integral part of normal work.

This guide briefly presents the local, regional and national organisations and programmes related to the work on safety (Figure 1), and also describes their practical implementation. A new tool presented here is the Safe Community operating model created by the WHO that can be used to develop and coordinate local safety work and ensure that the work is actually carried out in practice with high quality.

This guide consists of four parts. The first part presents national guidance and action programmes and the tools for local work on safety, such as local safety planning and the municipal well-being report.

Figure 1. Local, regional and national work on safety.

The second part describes the Safe Community operating model that has been developed so as to ensure the quality of the work on safety. The second part also contains examples on the practical implementation of the model.

The third part briefly addresses theories on safety as well as the auditing and assessment of safety work, and statistics that can be used in the work on safety. The fourth part presents the latest statistics on injuries in Finland and estimates the related costs. Each part is an independent entity that can be read separately.

We wish to thank the numerous experts who have commented the contents of this publication during the many writing phases. Special thanks to Maija Peltokangas (Ministry of the Interior), Merja Söderholm (Ministry of Social Affairs and Health), Tarja Mankkinen (Ministry of the Interior, Secretariat of Internal Security), Yrjö Heimonen (City of Hyvinkää), Aimo Ahti (emeritus, City of Kouvola), Ilona Nurmi-Lüthje (emerita, START Centre), Marko Palmgren (Regional State Administrative Agency of Lapland), Anne Sormunen (Association of Finnish Local and Regional Authorities), Seppo Nieminen (City of Hyvinkää), Liisa Kolari (City of Kouvola), Mirka Råback (National Institute for Health and Welfare), Jyrki Harjula (City of Kouvola) and the staff of the Injury Prevention Unit at the National Institute for Health and Welfare. We also wish to thank Glenn Welander, Leif Svanström and Robert Ekman, the authors of the book Safety Promotion – an Introduction. Their work has been used as a valuable source in several passages where we describe how to apply the Safe Community operating model in the Finnish context.

06/05/2014

Brita Somerkoski Pirjo Lillsunde Antti Impinen

Do you know how safety matters are arranged in your municipality?

PART I

Safety is a universal concern and the responsibility of everyone

1 National programmes direct the work on safety

Pirjo Lillsunde & Brita Somerkoski

Everyone is responsible for improving safety

The right to a safe life is a fundamental human right. Safety belongs to everyone, regardless of gender, age, ethnicity, religion, opinion, disability or illness. Furthermore, everyone is responsible for promoting safety. Safety culture can be improved when ordinary people, associations, administrative municipalities and organisations take safety into account in their operating environment and in all their actions. This also involves risk assessment, risk management and risk mitigation measures, preparation for disruptions, use of safety equipment, good operating practices and a positive attitude towards the maintenance of safety. Everyone can promote safety by their own actions. Likewise, everyone can identify and assess risks in their own environment.

Safety is promoted by legislation and guidelines as well as the actions of the authorities, municipal sectors, communities, businesses, organisations, associations and citizens. The goal of local safety planning is to reduce the incidence of crime, disruptions and injuries, and to reduce the damage caused by these, while maintaining safety and a sense of security. The safety plan guides practical actions. At a local level, work on safety and injury prevention takes place in several sectors and is carried out by many organisations and individuals. The improvement of safety is thus a common responsibility. Safety problems can be solved by several concurrent actions with similar goals. Safety planning is not extra work, but rather an integral part of normal work.

In national work on safety, the obligations are divided between several branches and levels of administration. Health promotion work is carried out pursuant to the legislation on public health. Injury prevention consists of traffic safety education, occupational safety education and the prevention of domestic injuries and those suffered in leisure activities. Injury prevention is a part of local safety planning and the promotion of well-being and health. Traffic safety is the domain of the Centres for Economic Development, Transport and the Environment (ELY centres). Prevention of domestic injuries and those suffered in leisure activities is the responsibility of several departments in the Regional State Administrative Agency. The main responsibility lies with the Department for Rescue Services and the Department of Social Affairs and Health.

Safety planning is further promoted by the National programme for preventing injuries at home and in leisure activities 2014–2020, which is presented next.

The Government's decision-in-principle on the Internal Security Programme

Finland is the safest country in Europe, where people and various groups of the population experience society as equal and just.

The objective of the Internal Security Programme is to prevent injuries, accidents and crime, and to increase the feeling of security. The third Finnish Internal Security Programme was created in 2012.

In general, the well-being of people living in Finland has increased, but at the same time, an increasingly visible set of problems accumulates for a small group of people. The main challenges in Finland are social exclusion and the polarisation of society. The purpose of the programme created by the Ministry of the Interior is to carry out actions to mitigate the recognized problems and risks. The most important individual goals are the reduction of alcohol-related safety problems, ensuring a safe environment for the young, increasing the safety and security of the elderly, and improving the services for victims of crime. Another goal is to adopt models for action that the authorities can use together with various organisations to act quickly against problems at the level of an individual, the community or the entire society.

At the core of the Internal Security Programme is the prevention and solution of problems in everyday safety and security. The programme is based on a broad understanding of safety and security, which is why a large number of authorities, organisations and businesses participate in it. The programme also includes regional action plans that will be created and implemented by Regional State Administrative Agencies (AVIs) (see Chapter 2).

The national programme for preventing accident injuries at home and in leisure 2014–2020

Nobody dies or is injured as a result of an accident, and serious injuries will be reduced by 25% by 2025.

The vision of the national programme for preventing accident injuries at home and in leisure activities is that nobody dies or is injured as a result of an accident. The goals of the programme are the realisation of a good level of safety in all environments, reduction of accidental deaths by 20% by 2050 and an increase in and permanent status

of resources for injury prevention. The programme complements the Internal Security Programme.

Injuries are a significant problem in the fields of public health and safety. In 2012, the treatment of injuries and poisonings was the second most common cause of hospitalisation in specialised care, and the fourth most common cause of institutionalised primary health care. (Cardiovascular diseases cause the largest numbers of hospitalisations, although the number of people affected is less). Injuries cause a significant loss of healthy life years and absences from work. They are the fourth most common cause of death. Every year, about 2,800 Finns die as the result of an accident. Almost 90% of accidental deaths and 70% of injuries occur at home or in leisure activities. The most common types of injuries are trips and falls. A third of fatal injuries take place under the influence of alcohol. Binge drinking causes a huge number of injuries, since the more drunk a person is, the higher the risk of injury.

The number of traffic injuries and occupational injuries has fallen in the long term, thanks to effective preventive measures. Other positive signs indicating an increasing level of safety in society are, for example, the reduction in the number of house fires and injuries involving children. This trend can be maintained by adding resources for preventing home and leisure activity injuries.

Successful prevention of injuries requires long-term planning and execution, where the combined effect of several actions plays a major role. In order to increase the effectiveness of the prevention of home and leisure activity injuries, we must allocate more resources and engage in closer co-operation across sector boundaries.

The main objectives and actions of the programme focus on the following action groups:

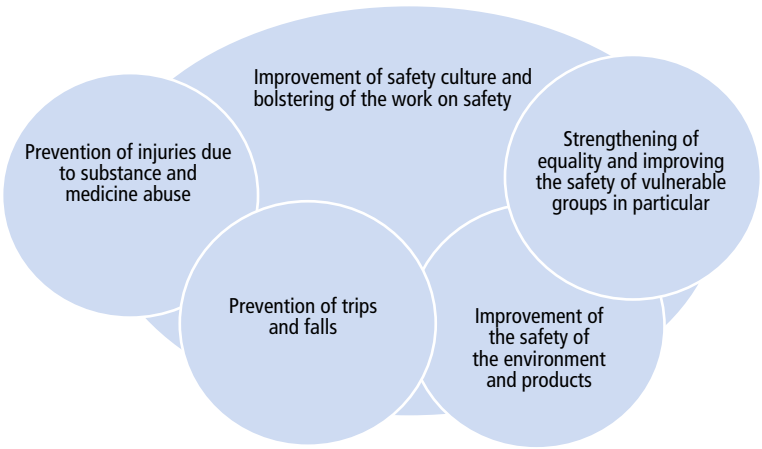

Figure 2. Action groups in the programme for preventing injuries at home and in leisure

The action groups and associated actions cover all age groups. Professionals and volunteers must make a combined effort to make citizens take greater personal responsibility for their own safety. Safety culture has a lot of room for improvement. For example, young and middle-aged men are overrepresented in domestic and leisure activity injuries. On the other hand, tripping injuries are common among elderly women.

Objectives by action group

The purpose of the programme is to strengthen the regional and local work on the prevention of injuries, to include the prevention of injuries in local safety plans and the electronic well-being report, and to put the prevention of injuries into practice. The municipalities and the Association of Finnish Local and Regional Authorities are expected to carry out several actions.

Strengthening of safety culture and work on safety

- A safety assessment will be included in the structures, planning, management system, decisions and operation of organisations (schools, day care centres, limited liability housing companies, nursing homes, hospitals, etc.).
- Measures will be taken to ensure that injury prevention measures and data on injuries are included in the municipal safety plan, well-being report and various programmes (such as age-political programmes and strategies concerning the elderly). Measures will be taken to ensure that the plans and programmes are aligned with each other, and that the main focus areas are included in the municipal strategy.
- Measures will be taken to ensure the provisions of the Health Care Act (sections 2 and 3) are met in such a way that injury prevention is included as a permanent part of the basic municipal work on the promotion of health and well-being.
- Prevention of injuries, especially in recurrent cases, will be included as a part of the treatment for injuries provided by health care
- Work carried out by municipalities to prevent domestic and leisure activity injuries will be promoted and supported. Municipalities will be encouraged to join the WHO Safe Community network.
- The prevention of exercise injuries will be expanded from exercise organisations to the health care sector, the Finnish Defence Forces, the churches, clubs and leisure hobby activities. Particular attention will be paid to the methods and safety equipment that prevent brain injuries.
- In the field, prevention work will take into account the fact that young and middle-aged men have a higher risk of injury.

- Effective and sufficient monitoring of consumer services will be promoted at a regional and local level.
- Methods of injury prevention will be added to the early childhood education plan and the safety plans for day care.
- The ability to monitor the occurrence of injuries at the local level will be improved.
- Online courses, bulletins and training videos will be created, and the existing e-learning platforms will be utilised (e.g. a virtual University of Applied Sciences). Education on safety equipment and aids will become a part of the basic and supplemental training for employees in the care and rehabilitation sector. The Safety Card training in the social and health care sector will be developed further. Expertise in professional and volunteer work will be strengthened by arranging various kinds of supplemental training courses and co-operation forums.
- Education on injury prevention will be incorporated as part of the basic and supplementary training of the teachers in various fields.
- More practices will be adopted and new customer-centric operating models and materials will be created so as to support independent preparation and engagement, and increase the awareness of the background factors underlying injuries.

Prevention of injuries related to substance abuse

- The intoxication status of patients who attend an emergency clinic due to an injury will be determined by a breath test or drug test.
- If necessary, a risk test will be conducted to identify risky substance abuse. The result will be entered into the patient information system and a follow-up plan will be created.
- If necessary, a discussion will be held with the patient concerning any risky behaviour behind the injury, with the goal of changing the patient's behaviour and improving their control over their life (for example: a motivating interview).
- A psychiatrist will be consulted in poisoning cases. All substance abuse interventions in social and health care, including occupational health care, will take into account the effects of a parent's substance abuse or mental health problem to children and domestic safety, pursuant to the Child Welfare Act (417 / 2007: section 10) and the Health Care Act (section 70).
- Attention will be paid to the increased risk of injury due to medications and the risk of drug interactions especially in elderly patients.

Improving equality and the safety of vulnerable groups in particular

- The injury status of vulnerable groups (such as people with substance abuse and mental health problems and suicidal persons) and targeted operating models will be developed in order to promote safety.
- Cooperation between the social and health care sector and the security sector will be increased by establishing operating models for early intervention and increasing engagement.
- Actions such as home visits will be developed so that the authorities are able to identify risks of injury, and co-operation will be increased in order to gain synergy benefits.
- Operating models for preventing injuries to the elderly will be put to practical use even more intensively than at present.
- When planning risk-based monitoring, the authorities will pay particular attention to the needs of vulnerable groups.
- Preventive rehabilitation will be increased.

Improving the safety of products and the environment; prevention of trip and fall injuries

- The pedestrian and cycling infrastructure will be designed as carefully as the roads for motor vehicles.
- The design and monitoring of assisted living units will pay attention to safety and security.
- Operators of care institutions and assisted living units will be encouraged to implement preparatory safety measures.
- The safety of exercise facilities will be increased and monitored more closely.
- Pedestrians will be more extensively warned of slippery conditions. People will be provided with more information on anti-slip equipment and safe footwear.
- The elderly and their family members will be provided with more information about the benefits, use and availability of anti-slip footwear, hip protectors and other aids that increase safety when moving about.
- Municipal sports and exercise organisations will co-operate more with organisations that take care of the elderly. The elderly will be provided with better access to a more diverse range of exercise facilities (e.g. exercise facilities in the immediate vicinity, transport services and "services on wheels").
- During a home visit, the customer's danger of tripping and falling will always be assessed and the necessary measures will be taken to prevent trips and falls.

- Organisations that provide services for the elderly will adopt a systematic operating model and practices for tripping prevention (such as the IKINÄ model) and will record all falls and their consequences.
- A model for the structures and processes of safety management will be developed for the services for the elderly, and this model will become a permanent part of all care, rehabilitation and advisory services.
- Platforms for innovation, experimentation and development will be created for the developers of safety technologies, and these platforms will serve as forums where the end-users, researchers and product developers can meet. The elderly and other special groups, their family members and attending professionals will be provided with more information about safety-enhancing products and technologies (such as the Functional Home concept). Opportunities to try out such technologies will be provided in places people visit regularly, such as pharmacies, grocery stores, shops and libraries.

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2 Local safety planning

Marko Palmgren & Anne Sormunen

The local safety plan describes what kind of local work is conducted in order to promote safety.

The national programmes will be incorporated into the existing practical work on safety in the regions and municipalities. Nowadays, the improvement of safety and efficient problem solving frequently requires jointly agreed and scheduled operations between organisations. The Internal Security Programme focuses on goals and actions that require collaboration among the authorities and between various organisations. The Internal Security Programme targets those areas of everyday life where safety risks and problems have increased, and where the risks cannot be addressed by measures that affect the entire population.

The programme approaches safety risks comprehensively, in a manner whereby the entire society creates networks so as to promote safety. In addition to collaboration among the authorities, the businesses, organisations, communities, villages and residents in an area also participate in the work on safety. A properly executed local project on well-being and safety is a systematic and results-oriented activity to maintain and improve safety and health.

Local safety plans became the norm in 1999, when the Government made a decision-in-principle called Turvallisuustalkoot (Safety as a Common Cause). The first safety plans mostly concentrated on crime prevention. The next important step in local safety planning was taken in 2004, when the Government made a decision on the Internal Security Programme. The programme states that in the future, safety planning should cover each major type of crime, measures to improve traffic safety, prevention of injuries and other threats to safety and security. As a result, the scope of the local safety plans is now broader.

On the municipal level, safety is promoted in all sectors, such as maternity clinics, day care centres, schools and care services for the elderly. A good safety culture in an organisation integrates injury prevention with the quality and safety management system of the organisation. The Finnish Safety and Chemicals Agency (Tukes), the Finnish Food Safety Authority (Evira) and the National Supervisory Authority for Welfare and Health (Valvira) guide the work of the municipal supervisory units and health inspectors as part of environmental health care.

The tools used in local safety planning are the local safety plan and the municipal well-being report.

The local safety plan as a tool

→ The goal of local safety planning is to reduce the incidence of crime, disruptions and injuries, and to reduce the harm caused by them, while maintaining safety and a sense of security.

→ A local safety plan is a description of the concrete objectives and measures that improve the safety of the local residents and the area itself.

The local safety plan can be seen as an umbrella that covers the existing safety projects, plans and programmes. The local safety plan helps the stakeholders to see an overall picture of the local work on safety. The local safety plans cover fire and traffic safety, crisis safety, injuries, crime and accidents, among other things. The safety plan can be created within a single municipality or regionally as a joint effort between several municipalities. The municipal administration is responsible for planning and organising work on safety and well-being in the region.

The local organisations know the unique characteristics of the region and the preconditions for work on safety. While work on safety covers an entire region, individual actions might, for example, target a certain part of a city. Safety planning gives the municipal administrators and leaders a comprehensive picture of safety and security in the municipality, and the factors that affect it. In addition, it engages the leaders to participate in the work on safety. In practice, this is achieved when the municipal and city councils process the local safety plans and supervise their implementation.

When the work on safety is multidisciplinary and engages the citizens, all parts of the process support each other and the various phases in the process follow each other naturally. Openness ensures that the authorities and other parties who participate in the safety planning process will also remain committed to it.

The other parties participating in the local safety planning are organisations, businesses and churches. This requires that authorities are willing to collaborate with other parties, and that they find the collaboration useful. The participation of other organisations is voluntary.

The safety plan is created for the duration of the council term. A new council will approve the plan at the beginning of its term. The execution of a safety plan will be ensured by annual execution plans. The plans will focus on matters that are identified in

the safety survey as having a major impact on safety. The plan specifies who will carry the actions out, when and how. The local safety plan will also take the available financial resources into account.

The well-being report as a promoter of safety

The well-being report is developed as a knowledge management tool for municipalities. It can be used to bring together various programmes and strategies. An electronic well-being report is a part of a quality management system and enables the users to monitor the performance of the local work on safety and well-being and, by using appropriately chosen key performance indicators, to document the numbers and causes of injuries, for example. Systematic and goal-oriented work will improve safety and prevent injuries.

The Health Care Act (1326/2010) provides that a well-being report should be created once in each council term. Information is systematically collected into the well-being report to create a comprehensive picture of the residents' health and well-being. The electronic well-being report creates a document to the council that forms the basis of the strategic and economic planning, implementation and evaluation of municipal actions and operations. The electronic well-being report supports municipal management and co-operation between the branches of municipal administration and various networks. The information in the well-report allows the decision-makers and network partners to see the vitality, structures and services of the municipality and well-being of residents by population group.

The municipal decision-makers use the well-being report in order to set the focuses for the current council term. The progress attained in the focus areas is evaluated annually as part of the financial and operative planning of municipalities, based on strategic choices. One focus could be, for example, the prevention of social exclusion among young people or promoting living at home for the elderly. The municipal management or a special cross-functional group for well-being sets the common operative goals, allocates the resources, defines the performance indicators and agrees upon co-operation with networked organisations. The purpose is to engage other organisations in the implementation of the plan by having them consider novel solutions and partnership solutions.

Prevention of injuries is a part of the municipal work on the promotion of well-being and safety. Therefore, the occurrence of injuries in the region and actions so as to reduce the number of injuries must be discussed in the municipal well-being report and the local safety plan in order to facilitate wide-ranging local actions against injuries.

The key performance indicators in the municipal well-being report are the residents' demographics and living conditions, the living environment, health, health habits, the degree of control residents have over their lives, employment, housing, functionality of the services and protection of the environment. The well-being report is an evaluation document, shared between municipalities and regions, which summarises the views of experts in various branches of administration.

The well-being report should contain follow-up data on safety and injuries as well as the preventive measures undertaken. The key safety-related performance indicators in the electronic well-being report can be the same as the ones used in local safety planning. The work on well-being and safety can be fused into an efficient and well-working whole in which the plans for promoting well-being and health care are systematically aligned and support each other.

Good local safety planning creates the conditions that enable regions, municipalities, parts of cities and other communities to join the international Safe Community to further improve their work on safety. The Safe Community quality assurance operations promote the practical implementation of the local work on safety. The safety plan and well-being report are deliverables needed when applying for a Safe Community quality certificate. In other words, the WHO's Safe Community operating model with its external evaluators is a way to ensure that the local work on the prevention of injuries and promotion of safety can be put to practice comprehensively. The Safe Community operating model is presented in more detail in Part II of this document.

> The approved well-being reports are public documents that can be viewed on municipal websites. This way, all citizens can see what good practices are used in other municipalities in order to prevent the social exclusion of young people, for example. The electronic well-being report also enables the residents to make their voice heard. The residents can study the document and decide whether the actions of the municipality meet their needs. The Association of Finnish Local and Regional Authorities coordinates the adoption of well-being reports in municipalities.
>
> The website for well-being reports is at www.hyvinvointikertomus.fi.

Safety planning in practice – experiences of the regions

The well-being report helped to establish focus areas

In the City of Oulu and in the Joint Municipal Authority of Selänne, Siikalatva, Kempele, Lumijoki and Tyrnävä, the well-being group actively co-operates with organisations, and permanent operating models have been developed for co-operation. Representatives of the municipal well-being group have participated in meetings and sessions with various organisations where they have presented the challenges to well-being and the performance indicators selected for the municipal well-being report. Based on this information, the organisations have examined how they might co-operate with the municipality so as to support the well-being of the residents.

The municipalities have used of the well-being report as input into the revision and implementation of the municipal strategy. For example, the City of Kuusamo and the Municipality of Liminka have set the well-being of their residents as a focus of their municipal strategy. The City of Kuusamo considers the health and well-being of its citizens as a critical success factor. The promotion of well-being guides the creation of score cards, objectives and actions of the various branches of the city's organisation. In Liminka, the chosen focuses are an increase in the personal responsibility of the residents, preventive actions and improved early intervention, prevention of social exclusion, promotion of employment, reduction of public health problems and the development of services for the elderly. These focuses direct the annual budgeting and operations in the municipality. In Liminka, the actions recorded in the well-being report are evaluated and are annually reported to the decision-makers as part of the partial municipal review and financial statement. Likewise, the City of Rauma publishes a document called "The Story of Rauma" that is based on data produced by the electronic well-being report.

The electronic well-being report is a tool that brings added value to municipal management and co-operation. This tool can make local strengths and challenges visible. During the creation of the report, the operations of the municipality are viewed from the perspective of well-being. The participants feel that this has genuinely increased co-operation with the networked partners and across organisational boundaries within the municipality itself. The preparation phase for the adoption of the electronic well-being report is a learning process for both the municipal management and the well-being group as they incorporate the best practices, the personal responsibility of the residents and new operating methods into the operating strategy.

Lapland: The Everyday Safety programme in the municipalities

Resources must be used more effectively. Citizens and civil society organisations must become increasingly engaged in the promotion of everyday safety.

Five municipalities in Northern Finland – Kemijärvi, Pelkosenniemi, Posio, Tornio and Pudasjärvi – investigated how they could increase the well-being and safety of their residents while at the same time achieving savings. The result was a programme called Everyday Safety that tore down bureaucracy and revealed that a tight co-operation between the public sector, various organisations and businesses can produce a significant amount of additional resources for municipalities and ensure that the residents have access to services they find valuable – without the need for additional funding.

The operating model also clarifies municipal management and improves the utilisation of existing resources with the electronic well-being report, for example.

Why was the new operating model created?

The purpose of municipalities is to look after their residents. As a result, municipalities have over 535 statutory tasks and over 900 obligations associated with them. Furthermore, the municipalities are also obliged to create over 20 statutory programmes so as to ensure the well-being of their residents. Each Finnish municipality has dozens of workgroups carrying out these programmes and statutory tasks. Moreover, each municipality has dozens of projects with full-time project employees bringing everyday safety to the residents. These in turn generate good practices for other municipalities.

From the viewpoint of the political and administrative management of the municipality, the problem is that it is difficult to obtain an overview. We live in a fragmented world where each organisation seeks to carry out its statutory tasks or other tasks with as little resources as possible.

Our welfare state has changed into a society that tries to patch up damages to well-being, and while every organisation tries to do its best, it is ultimately forced to carry out last-minute corrective actions instead.

Any deficits in the well-being and safety of municipalities are reflected in municipal social and health care costs, which amount to approximately 60% of the municipal budget. Over the past two decades, the net costs of social and health care have increased. In the 2000s, the costs have even doubled in some municipalities. Figure 3 presents the net growth of social and health care costs in the Everyday Safety municipalities compared to the development Finland as a whole and Lapland.

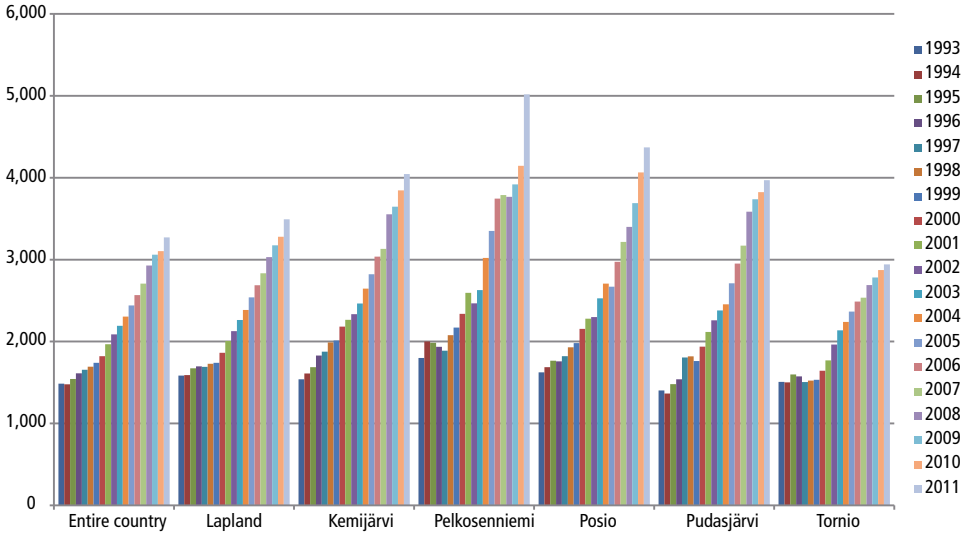

Figure 3. Increase in the net social and health care costs in the Everyday Safety pilot municipalities in 1993–2001, expressed in euros/resident. Compared to the corresponding development of the entire country and Lapland.

There is a need for socially and economically sustainable operating models, especially so as to control the escalation of social and health care costs. One of the factors increasing the costs of social and health care is the aging of the population.

The operating model in a nutshell

The idea of the Everyday Safety operating model is very simple: bring all the parties together, make a joint decision on what is the most important thing in the municipality and then start doing things together that improve the everyday safety of the residents. This way, the municipality and other organisations can co-operate in a way that sees the residents' needs as a whole. This in turn enables a more proactive approach, instead of just reacting to emergencies. It is easier to get funding for large project portfolios when several organisations are committed to a single goal. Furthermore, this also enables information on good practices to be stored. Locally created models for co-operation are also valuable.

The Everyday Safety operating model creates a circle of positive development: investing in work and the engagement of people brings savings. These can be invested so as to create new jobs or improve well-being and safety and create better opportunities for the citizens engagement.

An operating model that improves management and the use of resources:

1 Founded on comprehensive data
The electronic well-being report draws together the statutory municipal programmes, performance indicators, local needs (such as well-being and safety surveys of villages) and resources.

2 Common goals – common resources
A multidisciplinary workgroup on well-being and safety (consisting of the political leaders and officers from the municipal administration, other authorities, organisations, businesses and the church) define the focuses based on local needs.

3 Service entities that support everyday safety
Service entities that support everyday safety will be created for the locally selected focuses (for example support for living at home for the elderly, services for children and families). The customer-centric service entities will be created from existing services by applying service design, for example. Gaps in services are bridged by adjustments to operations, co-operation or common projects (for operating models, see the Good Practices toolkits, such as the publication of the Ministry of the Interior 29/2012 (in Finnish): Tie turvallisempaan huomiseen. Sisäisen turvallisuuden ohjelman hyvät käytännöt [Roadmap for a Safer Tomorrow – Good Practices for the Internal Security Programme.]).

4 Decision-making and monitoring
The focuses are entered in the municipal strategy, the budgeting and planning of municipal operations and the budgeting system. The actions of the various organisations will be entered into an electronic well-being report (to create an agreement-like binding). In this way, organisations, volunteer actions and various programmes can be treated as equals of the municipal organisation, and their significance and resources in the creation and maintenance of everyday safety becomes visible.

The Everyday Safety in Municipalities programme is administered by the Regional State Administrative Agency of Lapland and funded by the Development Programme for Rural Mainland Finland. The programme is a continuation for the Everyday Safety Network in Rural Areas programme that modelled the co-operation networks associated with internal safety in Lapland in 2009–2011. The Everyday Safety in Municipalities programme (2012–2014) is a part of the Internal Security Programme and the associated preventive work and safety planning in municipalities.

In practice, the operating model generates concrete forms of co-operation for the promotion of everyday safety:

- → The municipality of Tornio is planning a Family House (a centre for families) where organisations from the municipality, church, various associations, programmes and businesses can arrange weekly activities for families with children – without the need for extra funding. This gives children and their parents things to do during weekday evenings and weekends, and also gives them support.
- → The municipality of Pudasjärvi supports elderly people's ability to live at home by offering combined transport for mail, groceries, pharmacy products and other shopping. Moreover, taxi drivers and agricultural relief workers have been trained to act as care assistants who can multi-task.
- → The municipality of Kemijärvi has drawn together the expertise of organisations, empty premises and volunteers. The Mannerheim League for Child Welfare, the 4H Organisation, village associations and the church pooled their resources when discovered that it would be important for families with children to have supportive actions in the villages too, not just the municipal centre. They are now setting up family cafés in the village halls. This offers support for children and their parents: Moreover, pensioners are given something to do, generations can meet each other, the quality improves, village halls remain active, and organisations and the church reach a large number of people.
- → In the municipality of Pelkosenniemi, various organisations have decided to create a common activity calendar to avoid overlaps and to find areas for co-operation. This way, the residents can be guided from, for example, a maternity clinic or other social and health care services to other operations that support well-being. As a result, the residents can independently choose hobbies or services that support them best. New residents immediately become aware of the range of services offered by the municipality.
- → The municipality of Posio is developing models for crisis communications and operations with the Voluntary Rescue Service in the municipality, the Rescue Services, radio ham operators, village organisations, various associations, hunters, reindeer herders and businesses.

The Everyday Safety in Municipalities operating model won the first prize in the European Public Sector Award 2013 competition held by the European Institute for Public Administration (EIPA). The competition is held every two years, and in 2013, it sought creative solutions to overcome the European economic crisis. A total of 230 operating models from 26 countries took part in the competition.

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PART II

The Safe Community operating model

3 Improving the quality of local safety work by applying the Safe Community operating model

Brita Somerkoski and Pirjo Lillsunde

Everyone has the right to a safe and healthy life. – WHO

Using assessment and auditioning, a municipality or a region can further expand its work on safety and coordinate it more effectively. This chapter presents the Safe Community operating model that complies with the strategy of the World Health Organization. The Safe Community operating model can also be used as a complement to the existing structures that promote safety. In the operating model, an external auditor evaluates the overarching operations that strive for a continuous improvement of safety, and also audits the actual implementation of the local safety planning. The national and local strategies, programmes, plans and goals are made visible and put into practice via a wide network of operators in order to benefit the society and the community.

The Safe Communities activity is based on the central idea of the WHO's Health for All strategy: a safe and healthy life for all. The WHO has created a global plan for the reduction of injuries and injuries. The work has led to the creation of an international Safe Community network supported by the WHO. Any administrative or operational community that works systematically to prevent injuries can apply for membership. In Finland, the municipality is the most suitable level for safety co-operation, but a community could also be a region or an even larger entity.

What added value does the Safe Community model bring?

The Safe Community activities promote local work on safety and safety planning, and their practical implementation. The Safe Community certificate indicates that the operations of the community are based on analytical knowledge, evaluation of efficiency and local preventive measures. The Safe Community certificate is earned through long-term and wide-ranging work on safety in the community. The Safe Community certificate must be renewed every five years by submission of a separate application.

When a community applies for a Safe Community quality certificate, it must submit its local safety plan and the municipal well-being report. The Finnish local safety planning procedure offers a solid foundation for the Safe Community operations. The operating model does not impose a new administrative structure, but rather offers a means to ensure that the local work on the prevention of injuries and promotion of safety is put into practice.

A community that has implemented the Safe Community operating model is granted the international designation of 'Safe Community'. Municipalities that have been granted the designation become a part of the International Safe Community Network. The certificate on the quality of the work on safety creates a positive image and gives the region a competitive edge.

The added value is evident, for example, as follows:

- The sense of security increases.
- The community spirit grows stronger and well-being increases.
- The community can become more attractive by profiling itself as safe.
- The community is able to demonstrate that safety has increased.
- The number of injuries is reduced, and so are the associated costs.
- The community acquires a sustainable and permanent framework for its work on safety.
- The community obtains support and international contacts from the Safe Community network.

Criteria for the Safe Community membership

A community can apply for a Safe Community certificate when:

- It has decided to launch systematic and permanent operations in order to improve safety in the region.
- It has created a plan to carry this out.
- It has allocated resources for carrying out these operations.
- The safety planning of the community has entered the implementation phase.

The following seven criteria must be met before the community can apply for the Safe Community certificate from the WHO Collaborating Centre on Community Safety Promotion (WHO CCCSP):

1 **The work on safety is based on partnership and co-operation that is administered by a multidisciplinary group responsible for the promotion of safety**
The local safety planning conducted in Finnish municipalities offers a good foundation for multidisciplinary co-operation on safety. The multidisciplinary groups engage in strategic safety planning. The group will specify how the plan will be implemented in everyday life. The group will also process the action plan and action report, and will encourage communities, businesses, associations and individual residents to collaborate on safety. The groups could also engage in practical coordination, communications and maintaining contact with the international network.

2 **Work on safety takes into account both genders, all age groups, environments and circumstances**
Work on safety is effective when it is done at all levels of society and as part of the operations of all administrative bodies. Both the safety of the physical environment and the safety activities performed by an individual citizen are important. For example, hazardous locations can be identified by using the citizen's communication channels, taking safety walks or setting up online resident queries. Various forums for municipal residents are a part of the work on safety in the community.

Accessibility and targetability of the work on safety requires that injuries are known and identified well. When injury prevention is divided into small parts, for example by age group, the objectives and actions become concrete.

3 **Work on safety takes into account any particularly hazardous environments and people in vulnerable positions**
The safety plan identifies the local threats and the groups of people with the weakest status. Work on safety seeks to have an effect on, for example, the loneliness of the elderly, disengagement of immigrants, binge drinking or the social exclusion of young people.

4 **The actions for promoting safety are based on knowledge**
The operating models in place are based on research and evidence. Such models include the IKINÄ model for preventing tripping injuries to the elderly and the PAKKA model for preventing the distribution of alcohol to minors as part of general substance abuse prevention among young people. Some actions that promote safety are, for example, the use of protective devices and safety equipment, winter maintenance of access ways, swimming skills, proper lighting, locking and installing fire alarms. Evidence-based operations include zoning and other environmental planning actions.

5 There are systems in place to document the number and cause of injuries

A Safe Community defines the means for monitoring injuries, and seeks actively to reduce the number of injuries. Above all, the purpose is to have the community change its behaviour in a safer direction. This cannot be achieved by disparate actions. Attention should be paid, for example, to the identification of the causes of injuries, the analysis of the number of injuries and the effectiveness of preparatory measures.

Injury status should be monitored so that preventive actions can be targeted correctly. The community must know what kind of injuries occur, when do they occur and to whom. In this way, the community can investigate whether the environment contains features that predispose people to injuries. The number of injuries can be calculated from statistics gathered by the police, rescue department, health care organisation and the emergency control centre. This could provide information about traffic accidents, workplace injuries and injuries at home or leisure. Risk behaviour in the local population, such as alcohol use, 'a tendency to suicide or violence can also be monitored. Actions like these can be used to map the safety situation and associated problems.

The quality of safety operations can be developed in many ways, for instance effective communications, improving hazard identification, effective use of resources and delegating responsibility. After the problems have been analysed, the next step is to create an action plan, to implement it and evaluate the goals, processes and results. The injury situation and the action plan based on it can be documented in the well-being report. The electronic well-being report is described in more detail on page 19 of this guide.

6 The implementation and the change achieved is evaluated

The operation strives for tangible results. Therefore, it must be ascertained whether an action has reduced accidents, violence and injuries.

The change can be described, for instance, by using the statistics mentioned under item 5. It might take a few years to obtain statistical evidence, as the effects do not manifest themselves quickly.

7 The communities continue developing their operations and share their experiences in the national and international Safe Community networks

The Safe Community network arranges seminars. Their scope can be global, European or national. The communities are encouraged to arrange national seminars. A good practice might be that communities belonging to the Safe Community network take turns each year as the community responsible for organising the seminar. The seminars concentrate on the promotion of safety and expertise and the sharing of good practices. The international seminars are held in English.

Step by step instructions for joining

The first step in joining the Safe Community network is a survey of the overall safety situation. Documents that describe safety in the community are collected as sources for the development work. Such documents include, for example, local safety planning documents that can be used to draw conclusions on the status of safety in the community before the operations begin.

1 Actions before the certification process

- The safety objectives and foci are defined based on the needs of the community
- The overall status of safety is surveyed.
- Safety plans are created.

2 Submitting the application

The application is addressed to the WHO Collaborating Centre on Community Safety Promotion (WHO CCCSP). The application is signed by the officer in charge of the community, for example the municipal leader. The application must indicate the name of the community, the contact persons and their contact information, invoicing address and the organisation number. The costs of the International Safe Communities Network (ISCN) are covered by registration fees. The membership process starts when the application has been submitted and the 1,000 euro registration fee (year 2014) is paid. The community will be added to the database of the collaborating centre, and the community is sent instructions on starting the auditing and appointment process. The collaborating centre will appoint an auditor and a deputy auditor and will send the auditing documents to the community. The applicant organisation will pay for the auditor's travel and accommodation costs and an auditing fee based on the auditor's loss of income. The working time of the auditor will be 32 hours and the deputy auditor will work for 5 hours.

3 Quality certifications audit

The collaboration centre coordinates the auditing of the applications. The auditing is conducted following the ethical principles of the Safe Community network. The auditor visits the community operations on the spot. During the auditing visits, the auditors verify the information in the application, meet the people who created the application and interview representatives of the community staff and citizen organizations. The auditor will visit a few sample sites and their operations, such as schools, hospitals, sports facilities and playgrounds. An auditing visit usually lasts for approximately two days, perhaps longer if the community is a large one.

At the end of the audit process, the auditor gives an oral presentation on any need for further clarifications, and discusses with the representatives of the community the schedule of any corrective actions. The membership can only begin when the Safe Community criteria are met. After this, the auditor will write a report on the visit.

4 Accreditation ceremony upon joining the network

The designation ceremony is often held in conjunction with a seminar or conference. The quality certificate for safety is valid for five years, after which the community can re-apply for the certificate. In case of a re-designation, the safety operations of the community are audited again, usually by documents alone.

Application for a Safe Community membership for

6 months prior to membership start

- Letter of intent to the collaboration centre
- the acceptance process starts

6 weeks before the memberships process starts

- auditing visit to verify the work on safety in the community
- any changes required to the operations and documents
- the auditor verifies that the local operations fulfil the criteria and writes a report

4 weeks before the memberships process starts

- the final application is sent to the WHO CCCSP centre
- starting date of the membership is confirmed
- decignation ceremony is agreed upon

Accreditation to the network

- the community arranges the designation ceremony in their location
- the agreement is signed in the designation ceremony
- the collaboration centre adds the name of the community to the official Safe Community list

After the community has been designated to the network,

- the coordinator adds the name of the community to the official Safe Community list
- the community may start using the Safe Community logo and flag.

International operations of the Safe Community network

To strengthen their expertise, the network members have the opportunity to meet each other at conferences and seminars. At the conferences, the members share good practices, present research results and disseminate new operating models. Global conferences have been arranged since Safe Community operations started. The Regional Networks for Safe Communities (RNSC) hold regional conferences. Conferences and seminars are also held at a national level.

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4 Safe Community activities in quality assurance

Pirjo Lillsunde & Brita Somerkoski

Jointly agreed criteria have been drawn up for putting Safe Community safety actions in place. These quality standards are norms or rules about how something should be done. The overall objective is to ensure that the actions are sufficiently comprehensive and permanent. Local safety planning that takes into account the national strategic steering documents creates a sound basis for fulfilling and certifying the requirements of the International Safe Community criteria in Finland. The Safe Community criteria can be regarded as a quality assessment tool to ensure that the strategic and safety plans are realised in practice.

What is quality assurance in safety work?

The operational criteria or the Safe Community network makes it possible to evaluate community safety from outside the community as well. The activities are steered by, among other things, alcohol, drug and health programmes as well as by national patient safety strategies, local welfare strategies, and the Target programme for the pre-

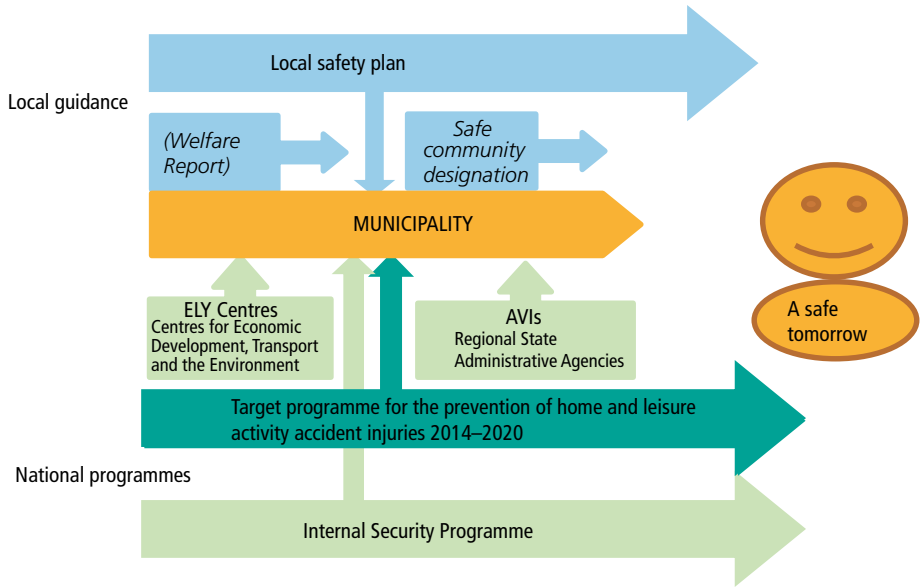

Figure 4. Safe Community action in relation to safety programmes.

vention of home and leisure accident injuries. Internal safety programme (Figure 4). National strategies and programmes are implemented at the local level.

International comparison has found Finland's policy programmes and legislation to be excellent when compared on a European-wide basis. The accident situation in Finland, however, looks rather unfavourable. For example, in 2009 Finland lost altogether more than 8,000 potential years of life due to accident- and violence-related deaths of children and young people. If the situation in Finland were as good as that in leading European countries, more than half of these deaths could have been avoided.

Commitment to action

The entire community from management to individual citizens is involved in promoting the safety objectives. Quality assurance enables the activities to be continuously improved.

It is not necessary to increase resources in Safe Community activities – it is rather a case of directing the activities and introducing new operating models so that safety issues are taken into account. Safety promotion is a dynamic activity, which is carried out 24 hours a day in the community.

Accident prevention and safety work as part of the quality management system

Local security plans and welfare reports can be equated with a quality manual in which assessment of the situation, risk factors, objectives of safety activities, action plans and processes, people, organisations, responsibilities and powers are compiled and documented. Based on the documentation, information is obtained on whether to act according to plan, in other words on whether the plan will be realised in practice. The effectiveness of the work is monitored, analysed and evaluated and, if necessary, corrective measures are implemented. The process of approving a plan and monitoring implementation is part of the local decision-making process.

5 Experiences of the Safe Community operating model in Finland

Brita Somerkoski

Safe in Hyvinkää 24 Hours a Day

Safety goes hand in hand with welfare.

In Hyvinkää, the Safe Community activities are known as Safe in Hyvinkää 24 Hours a Day. Safe Community activities have been integrated into the local safety plan. The city's safety plan is like an umbrella under which all safety work is carried out. The City of Hyvinkää is Finland's first member of the international Safe Community organisation. Hyvinkää has been part of the network since 2003. Membership was renewed in 2010.

Pilot project to prevent accidents

The idea of belonging to a network originated in Hyvinkää by civil servants and elected officials. They had a shared desire to make Hyvinkää a safe city, and therefore adequate resources were available for this work. It was also a question of improving the municipal residents' feeling of safety. Ismo Laatta, labour protection delegate and chairman of the Traffic Safety Working Group, in particular facilitated the start of broad-based safety work.

Personal networks were important in the initial stages. Officials working in safety have provided both personnel and the willingness to engage in safety co-operation with operators involved in the city organisation.

Before the city joined the Safe Community network, an accident prevention trial was implemented in Hyvinkää in partnership with the National Research and Development Centre for Welfare and Health (STAKES), the Finnish Institute of Occupational Health (Työterveyslaitos) and the Finnish Road Safety Council (Liikenneturva). The project aimed to develop municipal work relating to the prevention of accidents. The aim of the pilot project in Hyvinkää was active, comprehensive work to prevent accidents.

During the trial, a number of projects were carried out, for example, in residential areas. In the Fear and Safety at Home campaign, the police increased their visibility in

residential areas with a view to reducing unauthorised movement. Health care students participated in furthering safety in the housing of the elderly by implementing Safe Hours as a Habit accident prevention project. As a result of the project, home care folders were distributed to the residents. On the basis of a survey of risk factors, the fittings and textiles in the apartments were renewed and powder fire extinguishers, fire blankets and torches were procured. Signs and lighting in the courtyard areas were improved. In addition, a pavement was constructed for the main road

After the pilot project ended, the Mayor and the political leaders made a policy decision to establish safety work in Hyvinkää. In August 2003, the International Safe Community Conference was held in Helsinki, and Hyvinkää was awarded Safe Community membership.

Action as part of local safety planning

Practical safety activities in Hyvinkää are guided by a steering group approved by the City Council on the basis of the safety plan. The steering group comprises the Mayor's management team, the secretariat of Safe in Hyvinkää 24 Hours a Day and a representative of the Evangelical Lutheran Church in Hyvinkää.

The steering group supervises the preparation of the safety plan and approves the final plan for presentation to the City Board and then to the City Council. The steering monitors implementation of the safety plan and annual action plans through the city's budget, interim reports and other reports. The steering group is also responsible for guiding maintenance and updating of the safety plan over a four-year term. The steering group convenes in interim report groups every four months, usually in conjunction with meetings of the city's management teams

The secretariat consists of representatives appointed by the City of Hyvinkää, Keski-Uusimaa Rescue Department and Itä-Uusimaa Police Department. The chair of the secretariat rotates on a biennial basis in such a way that the term 2014–2015 is chaired by a representative of the police department, the years 2016–2017 by a representative of the rescue department and the years 2018–2019 by a representative of the city. The secretariat also includes a secretary appointed by the city.

The secretariat, between steering group meetings, is responsible for co-ordinating implementation of the safety plan through the annual action plans for Safe in Hyvinkää 24 Hours a Day. The secretariat also co-ordinates reporting of the activities. For its part, the secretariat prepares the issues to be discussed in the steering group.

The secretariat is responsible for national and international Safe Community co-operation and liaison with various authorities, including the Ministry of the Interior and the National Institute for Health and Welfare. The city's communications unit in collaboration with the Safe in Hyvinkää 24 Hours a Day steering group is responsible for the city's safety work communications. The secretariat convenes monthly.

"We wanted to link safety issues more closely to everyday activities by renewing the organisation. Previously, the activities were separate from the city's organisation. It is important to share safety awareness widely within the organisation as part of day-to-day activities."

Daily safety operations take place as part of the routine work of the city's line organisation and supplement the work of the appointed multi-sectoral working groups.

Small acts of everyday safety

The themes of Hyvinkää's safety operations have been defined as priority projects consisting of

- a municipal forum
- safety of the built environment
- prevention of accidents at home and during leisure time
- prevention of exclusion and harm caused by intoxicants
- improvement of the safety of the elderly

In Hyvinkää, safety activities in line with the priority projects have been realised in the form of a number of measures, both large and small, which broadly involve municipal residents of all ages, businesses, boards and communities.

The expertise of the Traffic Safety Working Group in the built environment is used when the city implements new traffic arrangements. The working group also promotes attitude education by means of various events, for example, in connection with housing fairs.

Safety in the built school environment improved when the Paavola schoolyard was insulated from car traffic. Hyvinkää's cyclists and the Traffic Safety Working Group together set up a bicycle school for the primary school's second form pupils which teaches the rules of the road relating to cycling as well as biking on a skills track. It also checks the condition of cycle wheels. The police carry out a moped project in which they explain the risks of driving a tweaked moped to young people of moped age. The police also provide safety education for young people of driving age.

In the accident prevention project, municipal residents were encouraged to participate in a Kunnossa Kaiken Ikää (Fit for Life) walking test day, during which information on physical activity safety was distributed. At the same time, the balance and muscle tone of the participants was tested.

"With studs on the soles of your footwear, you can do things more confidently, as you don't need to fear slipping on the ice in the same way as when your shoes have no studs; you can even go and visit friends when it's slippery."

For elderly people, a service has been provided whereby volunteers telephone once a week to chat and ask how they are doing. During Senior Citizens' Week, elderly people are provided with information on safety in the home and assistive devices. The mobility safety of elderly people was included when the city launched a project to provide them with studs on the soles of their shoes or boots.

Ageing affects driving ability. A Hyvinkää-based driving school entrepreneur participated in the popular traffic course for the elderly which provided information on driving position, medication, traffic signs and issues relating to driving. Those who wished to could also participate in a driving test in the city. At the end of the test, the instructor informed the pupil whether or not they had passed. In this test, the participant did not lose their diving licence, however

Hyvinkää also implemented:

- a campaign on the use of fireworks
- a campaign on sanding and snowploughing
- a safety analysis of residential homes for the elderly
- an accessibility assessment of the city centre
- safety systems for sports facilities
- a pedestrian crossing campaign
- a 112 day
- a cessation courses for smokers
- a depression school
- a school pick-up and drop-off event

Safe in Hyvinkää 24 Hours a Day activities have been allocated an annual budget of approximately EUR 20,000. In addition, companies involved have been able to support the safety work, for example, by organising training events. The activities have not, therefore, been costly for the city.

New projects are always needed. The city's residents are encouraged to contact the chairs of the working groups if they come up with a new safety project. Feedback on safety can also be given through the city's website. One such example of feedback related to broken street lights. In Hyvinkää, the feedback is processed and the safety manager determines who is responsible for remedying safety deviations. The person who submitted the initiative is given feedback on action taken by the city. Many small safety-related issues have been addressed thanks to the active participation of the public. A safe community is close to its residents. It is characterised by an administration that listens and engages in interaction.

"In our city, new employees have not been recruited for Safe Community activities; instead the duties are included in the jobs of office-holders and those already employed. It is a matter of directing and co-ordinating the activities."

"One-off projects have only one-off benefits. When the activities are permanent, we can educate an entire new, safety-oriented generation."

Safe Community development trends

Important co-operation networks, both in Finland and abroad, have been established for Safe Community activities. We collaborate with many organisations, such as the Internal Security Secretariat, the Ministry of Social Affairs and Health, the National Institute for Health and Welfare, the Department for Rescue Services under the Ministry of the Interior, Suomen Pelastusalan Keskusjärjestö, SPEK (the Finnish National Rescue Association), the Finnish Road Safety Council (Liikenneturva) and the Association of Finnish Local and Regional Authorities.

The international Safe Community network has made safety know-how and expertise available to the city's operators.

Hyvinkää next aims to improve statistical reporting relating to safety. It remains to address whether the city should either acquire its own accident statistics system or join a more comprehensive system. Statistics can be used in order to assess the effectiveness and economic viability of the activities. The municipalities should have at their disposal a patient information system of the kind which enables accident data to be made available to the authorities in order to support decision-making. In connection with modernising patient information systems, consideration should be given to how the system supports statistics relating to safety.

Safety work will never end. New risks and hazards will emerge, and the situation in the community is changing continuously. Actors operating in the field of safety in Hyvinkää consider it important to access safety experiences, especially with respect

to immigrants. Hyvinkää collaborates with the Council for Crime Prevention is this matter. The city also wants to develop the municipal forum by including the residents more in the activities.

Hyvinkää is satisfied with the results of the Safe Community operating model. The city has profiled itself as a safe place in which to live and, for many people, there is a social need for actions contributing to safety.

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PART III

Theory and evaluation

6 What is safety?

Brita Somerkoski & Pirjo Lillsunde

Safety equals welfare – welfare equals safety.

According to WHO, safety is a condition where factors that are a threat to a society are managed in such a way that citizens have the opportunity to enjoy welfare and well-being. According to another definition, safety is a condition where one is free from danger.

In English, the concept 'safety' has two separate meanings. 'Safety' implies a human-aspect, inadvertence, freedom from accident or injury, while 'security' implies deliberateness or intent, as well as being protected from dangers. The word 'safety' is frequently used in connection with accidents and the word 'security' is used refer to protection against undesirable threats. In Finnish, the concept 'turvallisuus' covers both meanings.

Safety promotion consists of measures aimed at maintaining and achieving the ideal conditions by fostering interaction and co-operation. Everyone should strive to achieve shared safety objectives. Legislation also requires actions that promote safety.

The feeling of safety is made up of a number of factors, such as health, the functionality of social safety nets and a living environment that is considered safe. The service offering has been fragmented across many different operators, for example, authorities, organisations and the private sector. Promotion of the feeling of safety is not the most important priority of any actor, however.

The feeling of insecurity, in turn, involves the vulnerability of an individual. Vulnerability is linked to various factors, such as gender, age, ethnicity and victim experiences. Vulnerability affects the ability to cope and act in various situations. Insecurity, extra vigilance and psychological stress can manifest themselves as continuous anxiety, fear and even as a panic disorder.

Resilience and protective factors

The concept of resilience is closely linked to safety. Resilience is the conscious and proactive ability to adapt and function in circumstances of disruption and to recover and develop afterwards. Resilience is the ability to cope with unforeseen threats and disruptions. It is capability and fortitude. Resilience is the ability to recover from adversities and learn from them. Resilience is needed at all levels of society from individuals to companies, as well as locally and nationally.

In the case of Individuals, resilience means perseverance, not giving up and other protective factors. A child who has lived in a socially challenging or restricted environment can grow up to become a balanced adult thanks to resilience factors such as care and protection provided by adults.

In the case of organisations and systems, resilience means the system's ability to absorb disruptions and reorganise during changes in such a way that the key functions and structures remain. It is thus the capacity for action in circumstances of disruption on the one hand, and the ability to recover quickly and at low cost on the other. Resilience does not emerge from any single component of a system; rather it is the result of interaction between all of them.

Own responsibility and independent preparedness of citizens – safety identity

Everyone is personally responsible for safety. A key concept relating to this responsibility is independent preparedness, which involves responsibility for one's own actions. Residents, agencies, public bodies or other communities should prevent hazardous situations from arising and strive to protect persons, property and the environment. The preparedness obligation applies to everyone, but certain organisations are obliged under the Rescue Act to draw up an emergency plan.

Homes can promote safety in many ways, for example by ensuring that smoke detectors work, by purchasing home food reserves or a first-aid kit in case of accidents. Attention to personal safety and that of the immediate environment is indicative of an individual's safety identity, which is linked to personal attitudes, and social environment and cultural issues.

The safety culture concept was initially adopted in occupational safety. Often, safety culture refers to safety practices within a community. On a broader level, safety culture consists of overall beliefs, norms, attitudes, roles, and social and technical procedures. These practices include, for example, identifying and assessing dangers, and safe op-

erating practices. In communities where a culture of safety is fostered, individuals do things to promote safety in practice.

The structural multi-dimensional aspect of society, such as social, technological, political and economic factors, should be taken into account when planning to promote safety in a community. For example, when investigating children's accidents, the aim should also be to understand the characteristics of the environments in which the incident occurred, the starting point relating to environmental planning and the parents' and children's way of acting.

Accident and injury as concepts

An accident is an event in connection with which a person dies, is severely injured or sustains a less serious injury. An accident involves two components: the accident event itself and the injury. The Swedish and English languages do not have a separate term for the Finnish concept of 'tapaturma' (accident). The English word 'accident' and the Swedish word 'olycka' correspond to the Finnish word 'onnettomuus'. Similarly, *injury* and *skada* correspond to the Finnish word 'vamma', which is replaced by the Finnish word 'henkilövamma' (personal injury) when the intention is to refer to material loss or damage. The word 'tapaturma' in turn relates to a person's own action arising from habit or custom.

The Finnish word 'onnettomuus' conveys the idea of an uncontrolled, random or unpredictable event in which fortune, chance or good luck has been absent. This leads to the idea that the event could not have been prevented. Use of the Finnish word 'onnettomuus', cannot be completely discontinued, as its usage is established in words such as 'tieliikenneonnettomuus' (road traffic accident) or 'Onnettomuustutkimuskeskus' (the Safety Investigation Authority).

Accidents can be prevented!

Theories and models of safety research

Accident prevention consists of working towards being accident-free. It is difficult to emphasise the need to promote safety when nothing has happened. Dealing with accidents after the fact is often costly, and repairing the damage brings little comfort to the person affected by the event. Freedom from accidents can always be deemed to be a successful end result. It is difficult to see the success of a helmet campaign promoting the safety of cyclists if an accident has not occurred. Once a cyclist has fallen and injured their head, though, the harm is obvious. It is important to assess the costs in-

curred as the result of injuries. This provides economic grounds for improving safety. Accidents can be prevented from the top (from an administrative level) or from the bottom (at a local or individual level).

Accident prevention work requires the development of plans, targeting of resources, new research methods, cross-sector collaborative networks and a good accident monitoring and statistical system.

Four Es´

Accidents, injuries, and disablement can occur anywhere – in traffic, at home, at school, during sports or at work. The likelihood of being involved in an accident or the severity of an injury can be reduced by identifying causal and circumstantial factors. The starting point is that the injury or disablement can be examined systematically and the accident analysed.

Accidents can be prevented by grouping preventive measures on the basis of risk factors. Based on these, researchers have developed the so-called four Es model. The higher the number of factors that can be influenced, the higher is the likelihood of achieving results.

1. Product safety (engineering)
2. Environmental safety (environment)
3. Regulations and implementation (enforcement)
4. Influencing safety attitudes and behaviour (education).

Risks to product safety include defective, broken, toxic, unfamiliar or impractical products. Product safety consists of making equipment and supplies safer for users; manufacturing toys in such a way that small parts do not break off and including with products clear instructions for use. Product safety also comprises the development of products that increase safety. Examples of these are life jackets, helmets anti-slip grips or smoke alarms.

Safety of the built environment involves accident prevention, for example, by means of town planning, increasing maintenance or improving traffic organisation.

Enforcement of regulations can effectively increase safety: firstly, by legislating, the aim is to encourage, for example, the use of life jackets or fire safety promotion activities and secondly, by implementing supervision, compliance with regulations can be facilitated.

Human attributes and abilities are often involved in the occurrence of an accident. Inexperience, ignorance, attitude or impaired perception increase the likelihood of an accident. It is possible to affect these issues through education. For example, safety communication offered by the rescue authorities, the traffic safety hour, theme days at workplaces or swimming school activities are educational means of promotion safety.

Communication can awaken people's activity in influencing their own living environment and that of their family and friends. It is important that there is a wide public debate on these issues, and that the community discusses safety. A number of reports suggest, however, that safety communication alone is not sufficient to reduce injuries; legislative and other measures are needed too. Over the decades, encouraging results have been obtained in the cumulative effect of various preventive measures in transport: legislation, guidelines, supervision, safety, communication, vehicle and road safety.

Haddon's matrix

William Haddon Jr, who studied safety in the 1970s, concluded that accidents should be investigated and analysed in the same way as diseases. Haddon is renowned as the developer of concepts and frameworks for analysing accident research and preventive work. Haddon also proposed that central to accident prevention was "to prevent harmful energy accessing the individual,"

The model developed by Haddon, the so-called Haddon's matrix (Figure 4) examines the time dimension and causal factors crosswise. Injury situations are placed in a timeline before the accident, during the accident and after the accident. In each of these, measures can be applied to a person, to the factor deemed the cause of the accident and to the environment.

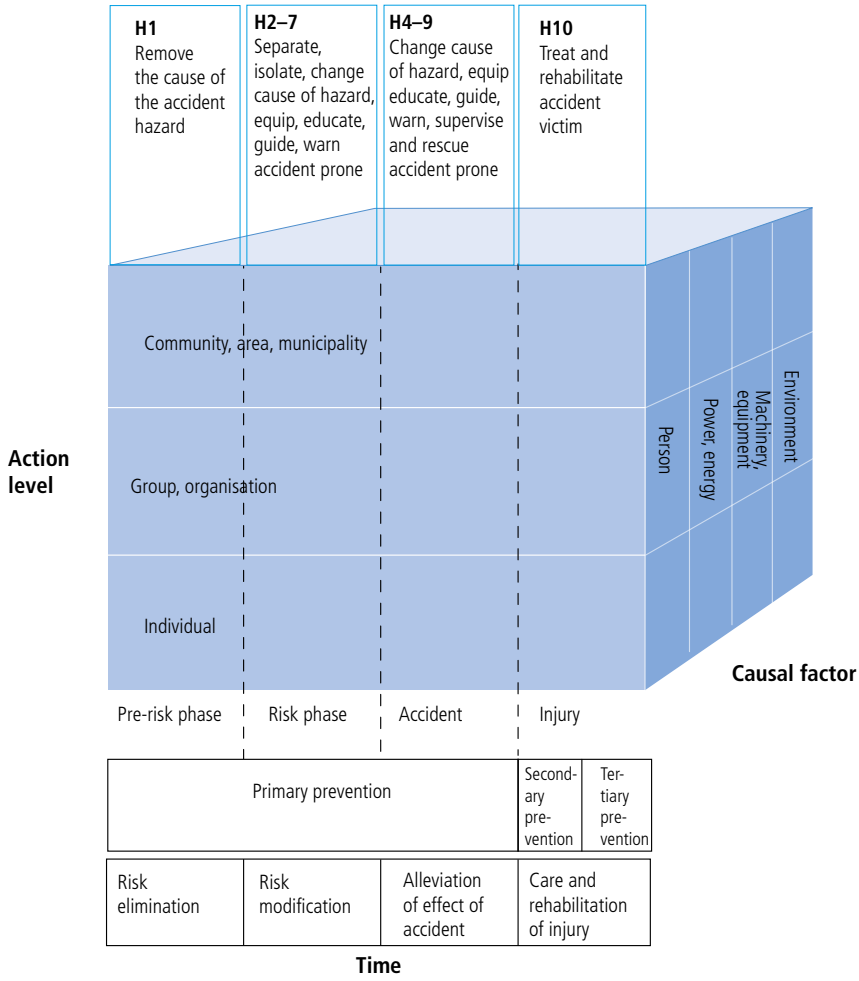

Figure 5. Haddon´s matrix. Source: Welander, G; Svanström, L & Ekman, R. 2004. Safety promotion – an Introduction. 2. revised edition. Stockholm: Kristianstads Boktryckeri.

Reason's accident theory – the 'Swiss cheese model'

While studying occupational accidents, Reason developed a model relating to accidents in general. According to this so-called Swiss cheese model (Figure 5), accidents, apart from organisational factors, are caused by local conditions and, ultimately, by the action itself. Accidents and hazardous situations arise as the result of the combined effect of multiple active and latent malfunctions. Accidents arise from the concomitant failure of protective factors.

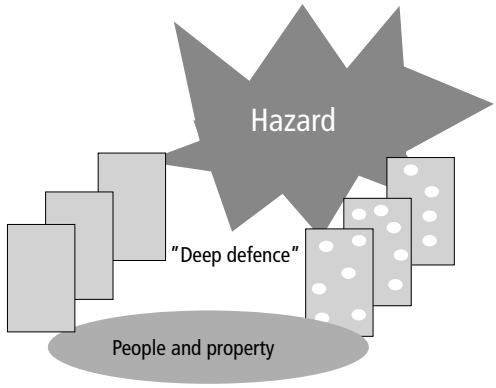

Figure 6. Reason's Swiss cheese model Accidents arise from the concomitant failure of protective factors.
Source: Tom Hanén Turvallisuusjohtaminen ja rajavartiolaitos. Johtamisen laitos.
Julkaisusarja 1, Tutkimuksia N:o 30

Time-based preventive measures, or prevention levels

Researchers have classified safety promotion in a number of different ways. One of the most common methods of classification involves the time dimension of an accident.

- Primary prevention (first level) involves measures put in place to prevent accidents in advance. These measures are targeted at healthy people, and the aim is to prevent accidents arising entirely.
- Secondary prevention (second level) involves measures aimed at reacting to an accident in such a way as to avoid the worst consequences. In this case, the aim is to prevent a pre-existing injury worsening and shorten the duration of the illness.
- Tertiary prevention (third level) involves measures aimed at ensuring recovery and remedying the situation as quickly as possible after the event. This approach can prevent recurrence of an injury or worsening of other effects as well as promote rehabilitation and adjustment.

Concomitancy of safety measures

Measures that promote safety can be examined on the basis of concomitancy. Concomitancy of preventive measures

- individual measures (for example, seat belt, distribution of reflectors or smoke detectors)

- concomitant measures (multiple simultaneous safety measures, for example, to prevent elderly people from tripping and injuring themselves)
- general promotion of safety (general information on preventing accidents)

It is possible to learn from near-miss situations!

Preventive measures aimed at individuals, communities and groups

Safety promotion aims at permanent results. Good results achieved by individual acts are easily short-lived – that is why safety promotion should proceed on multiple levels.

Individual level

At the individual level, the aim is to affect the individual's knowledge, skills and attitudes in such a way that their actions become safer in practice. When working at the level of individuals, measures can be directed at everyone or only at individuals particularly susceptible to risk, such as people with disabilities.

Group level

Belonging to a group is an inherent part of being human. Primary groups consist of close groups, such as a family, a school class or a group of young people of similar age. Secondary groups consist, for example, of a church, a trade union or an organisation. These often have a more official status. Group-oriented work to influence safety consists, for example, of measures targeted at age categories or special groups. The involvement of organisations and associations in safety work increases effectiveness and sense of responsibility. Group dynamics, i.e. the relationship between the members of a group can help in achieving shared safety objectives. Development of a safety culture entails a leader to guide the actions of the group towards shared objectives.

Community level

Exertion of influence at the community level involves entire municipalities or other wider communities, for example, educational institutions or care homes. Community-oriented activities focus on the organisational structures in accident prevention, management systems, and long-term programmes that progress systematically.

Active and passive approaches

William Haddon modelled safety approaches for the individual to be protected, and divided preventive measures into active and passive safety acts. From the standpoint of the person to be protected, active measures promote personal action and the protection of fellow human beings so as to ensure that nothing adverse occurs. From the standpoint of the person to be protected, the passive approach means an environment in which errors are permitted, for example, equipment safety applications or high-end technological innovations protect people in the event of an accident without the individual's need to take this into account in their actions. In practice, for example, a car seat belt is an active safety device, which requires a motorist's own choice as to whether they use it or not. A car airbag, however, is from the user's standpoint a passive safety device; it has been developed to function in an accident without decision-making by the motorist. The term *passive approach* is rather misleading in that it requires active action by the society, the community, the authorities, and product and equipment manufacturers to achieve safety in legislation, guidelines, the environment, products and apparatus. Examples include active improvement of road and vehicle safety.

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7 How to survey and monitor the accident situation at local level

Brita Somerkoski and Antti Impinen

Actors involved in and financers of safety projects require assessment as a support for their decision-making. In order to demonstrate that local safety promotion work is effective, the activities must be based on information. Information-based safety analysis aims first to create an overall picture of the local security situation or of the hazards in a particular area. Information on the area's safety and accident statistics are compiled in a baseline survey. This supports planning and development of the activities.

Accident-related parameters include

- fatal accidents
- hospitalisations due to accidents
- outpatient visits due to accidents
- days of sickness leave due to accidents
- severity of accidents
- costs arising from accidents and savings if the accident had not occurred
- number of above-mentioned accidents in particular demographic groups or regions.

Key Finnish databases relating to health and welfare containing information on accidents include:

- **SOTKAnet**
  SOTKAnet contains comprehensive statistical information on welfare and health in Finnish municipalities. The service also includes key data on population and health in Europe broken down by country. www.sotkanet.fi
- **Terveytemme fi website**
  Key health indicators as well as the results of population interview surveys are published on the health website Terveytemme.fi (available in Finnish only). The indicators can be viewed by area (regions and large cities), gender, education and age group, as well as by time period. www.terveytemme.fi

- **Welfare Compass**
  The Welfare Compass is designed for monitoring welfare at the regional level. It enables the situation in an area or municipality to be monitored and compared with other regions by means of pre-selected indicators. The Welfare Compass has a collection of over 100 key indicators of welfare and health, and of social and health service performance trends. www.hyvinvointikompassi.fi

- **TEAviisari**
  The website TEAviisari describes the work being done to promote health by the administration and management of municipalities, joint municipal authorities and educational institutions. The online service's information is based on statistical data provided by the municipalities on their activities. The service's data describes, among other things, population, municipal economy, families, housing, morbidity, social and health services use, and lifestyles. http://www.thl.fi/fi_ FI/web/fi/tutkimus/tyokalut/teaviisari

  The accident indicators included in the above-mentioned databases are grouped together in the National Institute for Health and Welfare's website Piste tapaturmille http://www.thl.fi/fi_FI/web/pistetapatur- mille-fi/tilastot/tietokannat

- **Piste tapaturmille**

  In addition, information on accidents broken down by municipality, hospital district and rescue region is available in the regional reports on the National Institute for Health and Welfare's website Piste tapaturmille. http://www.thl.fi/fi_FI/web/pistetapaturmille-fi/tilastot/aluetilastot

Accident data is also registered in the systems of the police, rescue departments, health care, insurance companies and many other organisations. Data is also transferred to national information systems, from where it can be accessed.

> Do you know how health and welfare issues are managed in your municipality or in your children's school?

City of Kouvola as a pioneer in the use of statistical data

Accidents cannot effectively be prevented, unless it is known where, when and to whom they happen. For the purpose of collecting information such as this, the START centre was set up in the Kouvola area and tasked with collecting statistics on regional accident data in two different ways. At the population level, the data was collected in the patient information system. In addition, information was collected at the unit level for inclusion in the web-based TAPE programme. Information was collected, for

example, on day-care centres, schools, hospital ward care, and on home, non-institutional and institutional care of special groups. Risk groups were identified on the basis of the analysis and accident data was reported. This information was used to develop and implement accident prevention action in the municipality's service areas. The START centre's material included, in addition to ordinary accidents, information on intentional injuries in accordance with WHO's broad concept of accident. These include self-destructive acts, such as self-mutilation or attempted suicide, and becoming the victim of assault. The ultimate aim of the START centre's operations was to improve welfare in the municipality and reduce costs arising from accidents.

The START centre's statistics are suitable for use in all of the municipality's service sectors. The information made it possible to monitor risk behaviour in the region's population such as alcohol use, self-destructiveness and violence. The START centre's activities have borne results. In the age-standardised accident index of the National Institute for Health and Welfare (www.terveytemme.fi/sairas- tavuusindeksi) Kouvola ranks best among the 20 biggest cities.

What key statistics does a municipality starting Safe Community activities need to a look at? The most important statistical variables at the demographic level for accident patients presenting in emergency health care are:

1. External cause of accident (ICD-10). This is the most important variable as it enables personnel to ascertain the type of accident involved (for example, cycling accident, fall, fire accident).
2. Type of accident (ICD-10) (11 categories):

Y94.0	Home accident
Y94.1	Accident in institutional housing
Y94.2	Sports accident
Y94.4	Accident in traffic area
Y94.5	Restaurant accident
Y94.8	Other leisure time accident
Y95.0	Accident in hospital
Y 96.0	Working accident or work-related external factor
Y 96.2	Accident at school or day-care
Y 96.8	Other accident
Y 96.9	Unspecified accident

3. Injuries (ICD-10) (physician's duty)

The START centre's operations ended in late 2013, but the statistical coverage of accidents and the use of the material in the prevention of accidents continue in Kouvola welfare services.

8 Evaluation of safety promotion and injury prevention activities

Brita Somerkoski

Through evaluation and monitoring the activities become more visible; in other words, plans are specified, results reported, risks anticipated and needs for change identified. The evaluation can be directed at objectives, means, realisation, impacts or costs. The purpose of cost-related evaluations is to demonstrate to decision-makers and taxpayers that the funds allocated to the activities have been used appropriately and that they have achieved benefits, even savings. Evaluation of safety promotion programmes and measures enables the impact of the work to be demonstrated whilst at the same time obtaining information about resources, effective methods and best practices.

The aim of the Safe Community operating model is to reduce accidents and promote safety. When evaluating the Safe Community operating model, answers are sought, for example, to the following questions:

- What is the problem the actions seek to resolve?
- Which section of the population are the actions directed at?
- Did the actions have the impact planned in advance?
- Did the costs decrease as a result of the activities?

Evaluation data on changes in information and attitudes are obtained through a before-after setup. More permanent changes, for example changes in attitude, can be measured only years after the activities have ended. The observation method is generally used to analyse change in behaviour. Through observation, changes that have occurred in the use of bicycle helmets or seat belts, for example, can be analysed.

Process evaluation and self-evaluation

The safety situation can be analysed by means of process evaluation methods through which information about the direction of the activities is obtained, for example:

- Was the operating model realised as planned?
- Who did the operating model seek to reach?
- How comprehensively were the objectives achieved?
- What kind of problems and challenges emerged while the operating model was being realised?

Audits

In internal auditing, the members of the community evaluate the operations and the ways in which they are implemented. Enhancement-led and empowering self-evaluation consists of analysing the operations with a view to improving them and achieving joint objectives.

The National Council for Crime Prevention has drawn up a local and regional safety co-operation self-evaluation form containing separate questions on the work's start-up, implementation and evaluation stages. http://www.rikoksentorjunta.fi/fi/index/tyontueksi/turvalli- suustyonitsearviointityokalu.html

In general, auditing refers to the external evaluation conducted by an expert. *Peer evaluation* refers to improving work carried out by people belonging to the same occupational group or by people working on the same problem. This also involves learning; the members share and receive information and become aware of each other's values, attitudes and findings. Other forms of peer evaluation can be pair comparisons, assessment discussions or evaluation seminars.

A peer evaluator

- works in a similar environment to that of the party to be assessed,
- is independent of and external to the subject to be assessed,
- is an expert and a professional in the field to be assessed.

In Safe Communities activities, this kind of evaluator from outside the community is represented by an evaluator designated by the WHO Collaborating Centre on Community Safety Promotion (WHO CCCSP), see p 32, who evaluates the appropriateness

and implementation of the Safe Community criteria and safety plans in the community applying for certification.

Safe Community activities can be evaluated from within a project, by means of self-evaluation, for example, in conjunction with process evaluation. An evaluator assessing activities from within a community can take into account the impacts of the results in the community, and he or she also has the opportunity to monitor the impacts of the evaluation after a project has ended.

Effectiveness evaluation

Effectiveness evaluation examines activity-induced changes, for example, by documenting aspects relating to the implementation of these measures:

- How has the accident situation improved?
- Have the measures had an impact?
- What kind of groups has material been distributed to? How much?
- How many training events have been held?
- How many meetings and events have been held? Who has attended?
- What kind of documentation has been produced?
- What kind of costs have been incurred?

Impact studies provide information on, for example, development, changes in attitudes, behaviour or changes in the operating environment and on the need for corrective measures. Impact studies must therefore be carried out at the local level, where the activities are carried out.

Decision-makers expect the evaluations to provide concise quantitative information, for example, specific figures and trends. When comprehensive systems or changes to these are the subject of an evaluation, it can be challenging to condense the results into a quantitative form.

When examining the activities of people or communities, the reliability of the studies may be impeded, for example, by the following factors:

- Impacts become visible only after a long period of time
- Impacting factors are numerous (individual-centred and regional measures)
- A large proportion of impacts are indirect

- Only some of the impacts are quantitative
- Intra-sectoral differences can be considerable.

Various measurement methods and comparisons can be used to assess the reliability of the analysis. If these indicate a similar trend, the results can usually be considered reliable.

The input-action-output model may be used to study effectiveness, for example, in safety and well-being. Inputs in the model consist of intervention measures and the resources allocated to them; information and know-how, arousal of interest, development of model, initiation of measures or provision of support. Action, in turn, consists of new ideas, information, methods, operating practices, adoption and utilisation processes, problem-solving methods and training. New information, know-how or performance improvement also constitute results of a project's effectiveness. Outputs, in turn, can be considered, for example, as changes in operating practices, improvements in safety or well-being, or media hits, for instance.

Evidence-based practices

Central to Safe Community operations are permanent, continuous and *evidence-based practices*. Evidence-based practices are possible only if examined, assessed and analysed information is available. Information can be quantitative (for example, statistical data) or qualitative (for example, an interview survey); in this context the concepts and definitions must be established with care.

Evidence is based on verified information which is clear, dependable and accurate, for example:

- research data (scientific evidence)
- experts' opinions (evidence-based practice)
- personal knowledge and experience (experience-based evidence).

EY EVALUATION TERMINOLOGY	
Evaluate:	Consideration of the positive and negative sides and classifying and criticising them
Assessment:	A private, spoken or written assessment, for example, a school report
Audits:	An external assessment for the purpose of inspecting an organisation's operations
Benchmarking:	A form of evaluation in which a person or an organisation compares their own activities through another person or organisation
Diagnostic evaluation:	Baseline evaluation:
Evaluation:	Assessment
Formative evaluation:	Interim measurement of results obtained during activities
Indicator:	A gauge or measure, or a finding which describes an attribute, a condition or changes
	occurring therein.
Self-evaluation	Increasing understanding of own activities or learning for the purpose of guiding actions
Criterion:	A standard set in advance for an issue or a phenomenon against which evaluative
	conclusions on success or failure can be drawn
Quality:	A property describing prerequisites, processes and results
Monitoring:	Ongoing tracking of a process
Objectivity:	Reliability or universality, independence from evaluators
Participatory evaluation:	The subject of the evaluation is included in the evaluation activities and committed to them
Process evaluation:	A type of evaluation in which attention is focused on the activities and procedures themselves
Internal evaluation:	Evaluation of own activities by the organisation in question itself
Summative evaluation:	Final assessment
External evaluation	An analysis on the status of an organisation
	performed by external parties
Comparative evaluation:	An evaluation conducted between two or more entities

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PART IV

The statistics and the costs

9 Everyday accidents in statistics

Antti Impinen

- Almost 90 % of injury deaths take place in home and leisure
- Almost 80 % of accidents leading to injury take place in home and leisure
- Unintentional injuries are the fourth most common cause of death in Finland
- Unintentional injuries cause the second most hospitalisations in secondary care compared to other main categories of diseases
- Unintentional injury mortality in Finland is the fourth highest in EU region

During the past twenty years Finland has become a much safer place in several measures. Deaths caused by traffic accidents and occupational accidents have been steadily decreasing. The number of children's injury deaths is now the all-time record low. Such development is a consequence of long-term systematic work for improving safety in these sectors. Despite these successes the number of deaths caused by unintentional injuries has been increasing due to the growth of deaths from injuries in home and leisure. Currently injury deaths in home and leisure are decreasing slightly. However, their proportion of all injury deaths has increased while other sectors have become safer. Unintentional injuries are the most significant or one of the most significant causes of death in several age groups and are also one of the biggest reasons for hospitalisations. Considering how common unintentional injuries are and what is the magnitude their treatment demands they should be considered one of the major public health problems, comparable to cardiovascular diseases, cancers or musculoskeletal disorders.

Compiling injury statistics – Recent situation

- The incidence of less serious unintentional injuries is multiple compared to unintentional injury fatalities and hospitalisations.
- Statistics on serious unintentional injuries are reliable in Finland.
- The most important statistical sources for injury monitoring are the cause of death statistics and hospitals' care registers

In Finland, statistics on serious unintentional injuries is accurate and comprehensive. In general, the statistics are the most reliable on the most serious injuries. Especially the law on reporting the cause of death guarantees the high quality of Cause-of-Death Statistics on fatal injuries. Hospital inpatient registers are in most cases also accurate even though some unintentional injuries are not necessarily documented. Records on outpatient visits in secondary care are also compiled; however the information contained in the database has not yet been systematically reviewed and can be rather incomplete.

According to the official statistics unintentional injuries are the fourth most common cause of death in Finland. In addition, unintentional injuries and poisonings are the second most common cause of hospitalisations in secondary care and the fourth most common cause of hospitalisation in primary health care when compared to the other disease groups.

For each serious accident injury there is in general a multiple number of milder injuries. This can also been expressed so that a certain proportion of all accidents results in mild injuries, a smaller proportion in serious injuries, and a very small proportion in death. Only the part of accidents that results in serious physical or material injuries or damages are recorded in statistics. The majority of the cases that only have mild consequences are not included in any statistics and investigation of them is left to other research. Often we indeed speak about "the tip of the iceberg" when dealing with the reasons for accidental deaths and hospitalisation.

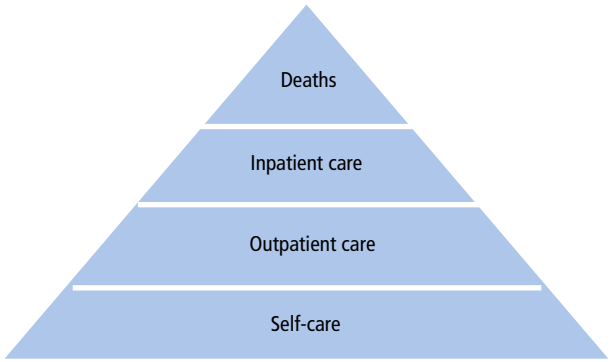

Figure 7. Numbers of accident injuries by seriousness

Finland in the international injury statistics

- According to Eurostat, injury mortality in Finland is the fifth highest in the EU
- Baltic countries have the highest injury mortality in the EU
- Other Nordic countries have significantly lower injury mortality than Finland
- International comparisons on mortality might not be completely accurate

Eurostat (http://ec.europa.eu/eurostat) is the statistical office of the European Union (EU). Its tasks include collecting data on the causes of death and occupational accidents produced by different national agencies within the Member States. Even though compiling statistics should be consistent in principle, it is based on the national statistics which may be affected by many different local practices (e.g. the procedures of collecting data on the causes of death or resources available for investigations). Accordingly, the comparison between different member states might not be completely accurate.

The burden of fatal injuries differs in EU between the East and the West. Western European countries tend to have the lowest burden of fatal injuries whereas the highest burden of fatal injuries is in the Eastern European countries. Baltic countries have the

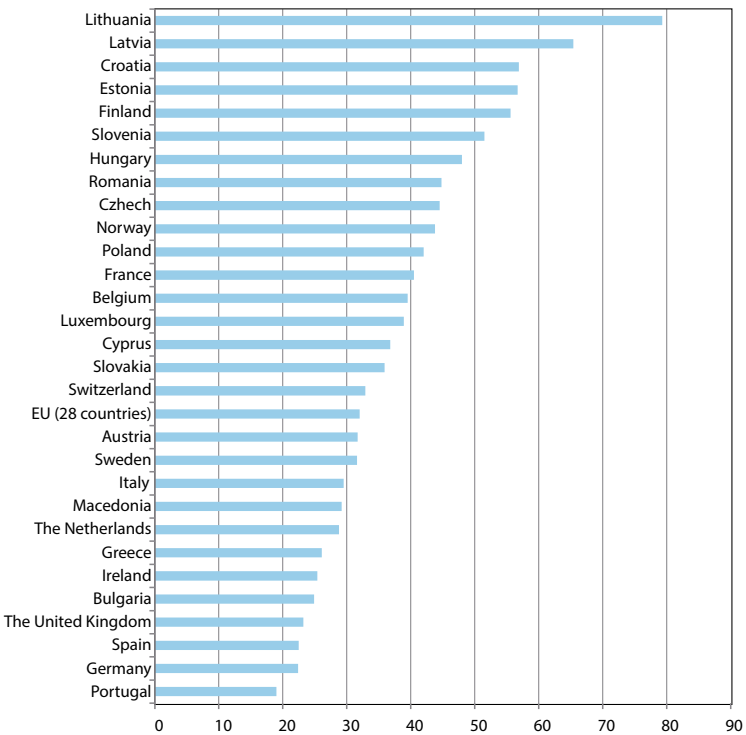

Figure 8. Standardized injury mortality rate per 100,000 inhabitants in 2010.

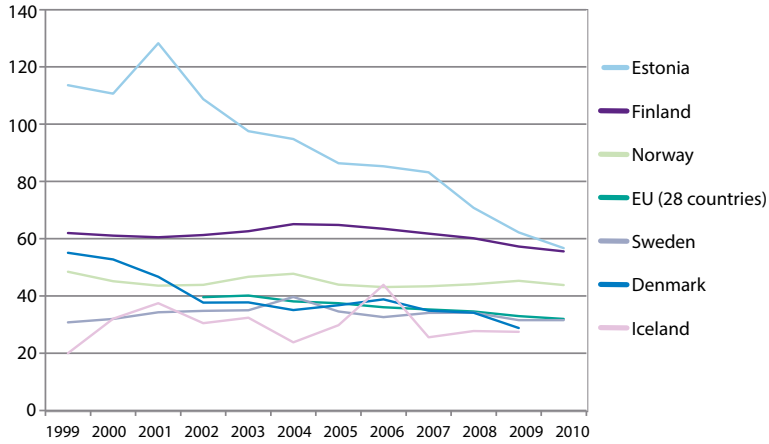

Figure 9. Standardized injury mortality rate per 100,000 inhabitants in 2000-2010.

highest mortality caused by injuries, followed by Croatia and by Finland which has the fifth highest injury mortality rate in EU. In Finland, the mortality by unintentional injuries is almost double in comparison to the average in EU. Finland's situation can be explained by differences in the rate of fatal home and leisure injuries which are responsible for the majority of injury deaths in the country. Differences in fatal road traffic injuries are smaller among the EU-28.

Injury mortality is significantly higher in Finland than in other Nordic countries; however it is clearly lower than in Estonia. During the first decade of the 21st century, injury mortality has remained relatively steady in Finland and other Nordic countries (Figure 3). In Estonia the positive development has been notable, as the number of fatal injuries was cut down to half during the past ten years (for instance, fatal traffic injuries have fallen to one third since the year 2000.

Fatal Injuries in Finland

- The majority of unintentional fatal injuries occurs at home and in leisure time, in health care facilities and other places excluding occupational and traffic environment
- The burden of fatal injuries increased at the beginning of the 2000s, but started to decrease at the turn of 2010
- Falls are the most common type of unintentional injuries causing deaths
- Unintentional injuries are currently the fourth most common cause of death in Finland

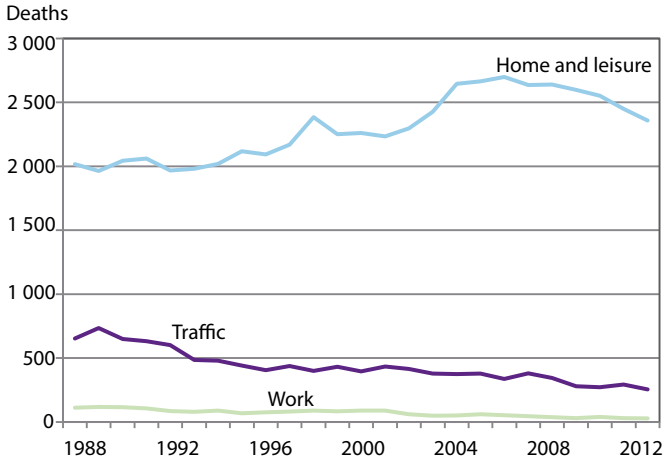

Figure 10. Fatal injuries in the three main categories in 1986-2012.

Altogether 2640 people (1708 men and 932 women) died as a result of injuries in 2012. The most common types of unintentional injuries causing death among women and men were falling or tumbling, which accounted for the death of 1157 people. 255 people died as a result of road traffic accidents during 2012, the proportion of men being three fourths. 28 people died in occupational accidents.

When fatal injuries are classified under three main categories, i.e. traffic accidents, home and leisure accident injuries and occupational accidents, the large number of fatal home and leisure injuries can be clearly seen compared to the other types of injuries leading to death (Figure 4). The number of traffic accidents and occupational accidents has been decreasing during the past twenty years whereas the number of home and leisure injuries has increased during the same time. Especially in 2003 and 2004 deaths due to alcohol poisonings and other alcohol-related injury increased clearly.

Traffic accidents include all light traffic (i.e. cyclists and pedestrians) and road traffic accidents in which at least one of the involved parties has been a moving vehicle (Statistics Finland, road traffic accidents). Occupational accidents include those injuries which have occurred to employees or farmers (Statistics Finland, occupational accidents). The number of fatal home and leisure accident injuries has been counted by reducing the number of fatal traffic accidents and fatal occupational accidents from all fatal unintentional injuries in the cause of death statistics.

Injuries that are neither related to occupational accidents nor road traffic accidents are defined as home and leisure injuries (HLI). A significant proportion of these injuries occur at home. Every fourth fatal injury among men and almost half of the fatal in-

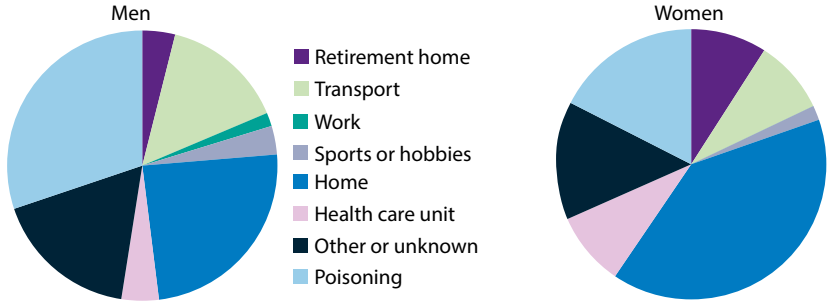

Figure 11. Fatal injuries by sex and injury type in 2012

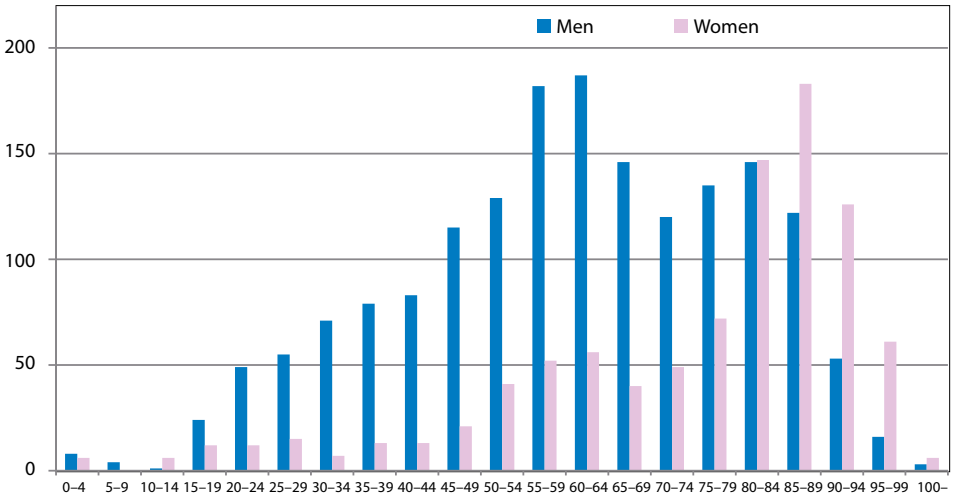

Figure 12. Fatal injuries according to age and sex in 2012

juries among women occur at home. Poisonings and traffic accidents are also leading causes of injury deaths among men, whereas injuries in health care facilities and poisonings are leading causes of injury death among women. Approximately every sixth fatal injury has not been categorized into any of the above-mentioned main category type.

Fatal injuries are rare among children aged less than 15 years, but their number increases rapidly with age. The greatest number of fatal injuries occurs to men between the ages of 50 and 70 years, whereas the peak of fatal injuries among women is reached between the ages of 80 and 94 years (Figure 6). The mortality rate is higher among men than women in all age groups, being constantly around 1.5–5 times higher compared to women.

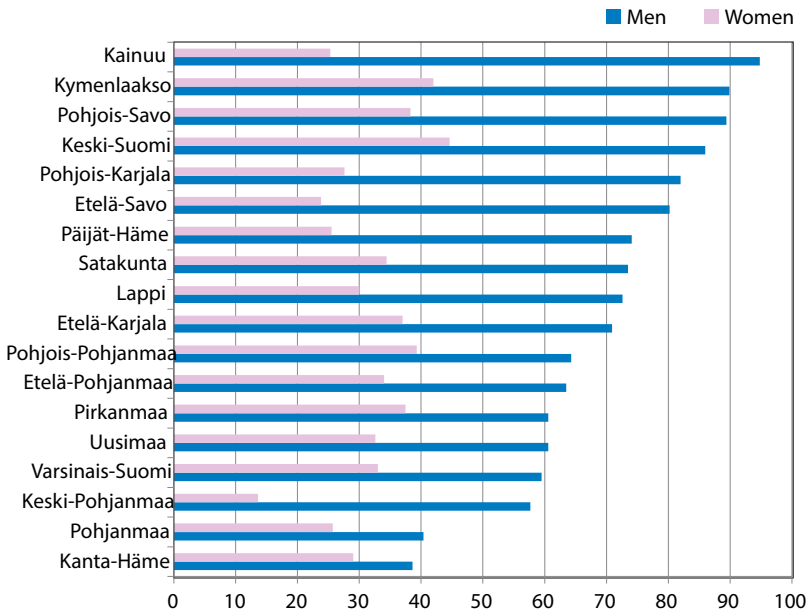

Figure 13. Standardized injury mortality rate per 100,000 inhabitants by province in 2012

There are significant regional differences in injury mortality. Specifically, differences can be seen in men's mortality: high mortality rates are mostly observed in Eastern and Northern Finland whereas lower mortality rates appear in Western and Southern Finland.

Hospitalisations caused by unintentional injuries in Finland

- Injuries and poisonings cause more than 100,000 hospital treatment episodes and almost one million days in treatment annually.
- Injuries are the second most common cause of hospitalisation in treatment episodes in secondary care and the fourth most common cause of treatment episodes in primary health care compared to other disease groups.
- The number of hospitalisations is especially high in older women
- Estimating the number of unintentional injuries is dependent on whether injuries are documented at hospitals

The biggest proportion of unintentional injuries demanding hospital inpatient treatment occur in everyday environments: home, sports or other leisure activities. More than half of the injuries demanding hospitalisation are due to falls. Ageing, intoxication and poor functional capacity are factors increasing the risk of injury. Men suffer somewhat higher numbers of injuries leading to hospitalisation than women.

Approximately 80,000 people per year are hospitalised for unintentional injuries and treated in more than 100,000 hospital treatment episodes (Figure 8). The number of hospital treatment episodes increased continuously from 2003 to 2009, during which time the amount of treatment increased by 10,000 episodes. The number of hospital treatment episodes started to decrease in 2010. Even though the hospital treatment episodes have become shorter and the total number of days spent in the hospital has declined, injuries still cause almost one million hospital treatment days annually.

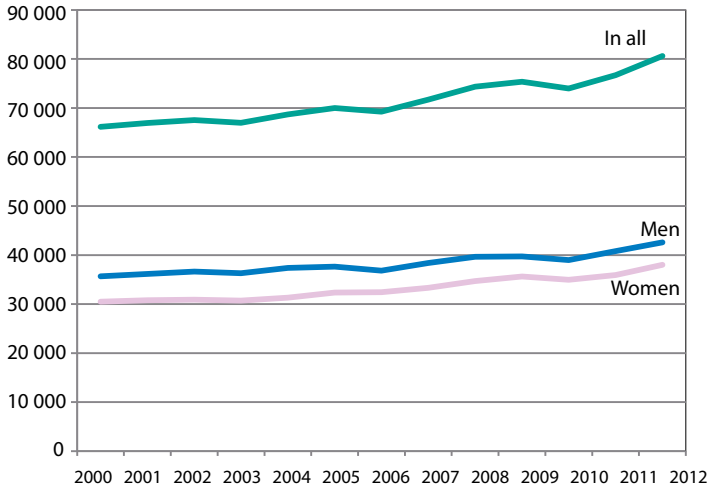

Figure 14. The number of individuals treated in hospitals as a result of an injury in 2000-2012

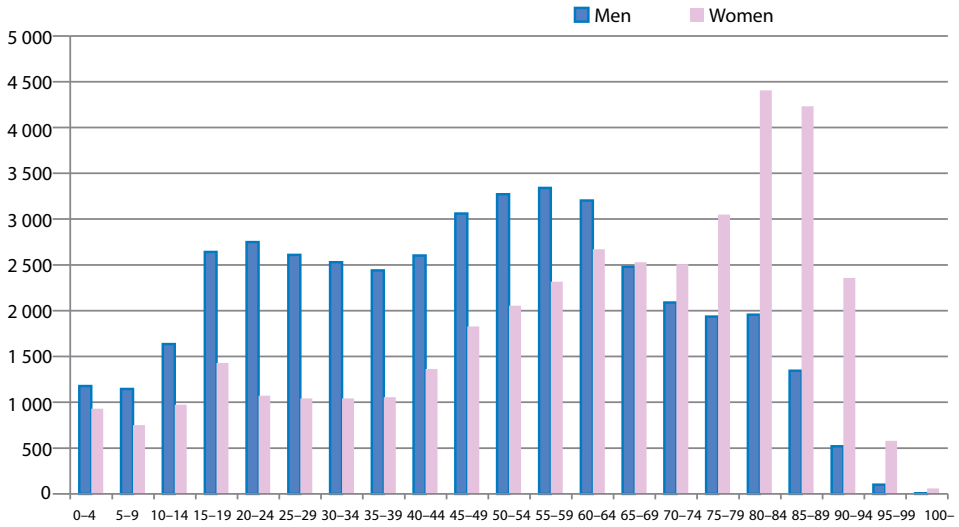

Figure 15. Injury hospitalisations according to the patients' age and sex in 2012

The number of serious injuries is almost the same among men and women. However, the stage of life when unintentional injuries occur differs among men and women, and the injury rates vary across age groups. More serious injuries occur to men than women until the age of 70 (Figure 9). The numbers of injuries increase in males aged 15 to 19 and again towards the age of 60 years. The number of serious injuries experienced by women in the older age groups is bigger than among men, which is mostly due to the larger number of women in these age groups. However, the risk of injuries increases steeply in older age groups among both sexes.

There are significant regional differences when examining the number of unintentional injuries demanding hospitalisation. However, there is need to be cautious when analysing the results. While the external cause leading to injury is always reported in regard to injury deaths, in regard to injuries demanding hospitalisation the external cause is not always recorded in the patient data registers. In that case it is impossible to identify the event which caused the injury. It is, however, possible to compare reliably the numbers of injuries demanding hospitalisations according to their actual medical diagnosis which is recorded nearly always. As most of the injuries are due to accidents, the number of injuries also represents the number of accidents. In 2012, the highest incidence of injuries demanding inpatient treatment (approximately 3000 treatment episodes per 100,000 inhabitants) occurred in Lapland and Northern Karelia. The Uusimaa province and Åland Islands had the lowest incidence of injuries demanding inpatient hospitalisation (approximately 2200 treatment episodes per 100,000 inhabitants). In 2012, there was least missing data on external causes leading to hospitalisation (less than 5 %) in Southern and Middle Ostrobothnia and Central Finland.

Regions reporting least data on external causes leading to injuries included Northern Karelia, Varsinais-Suomi and the Satakunta province, where the missing data accounted for 46%, 30% and 23%. Accordingly, it is difficult to estimate the exact number of unintentional injuries in these provinces.

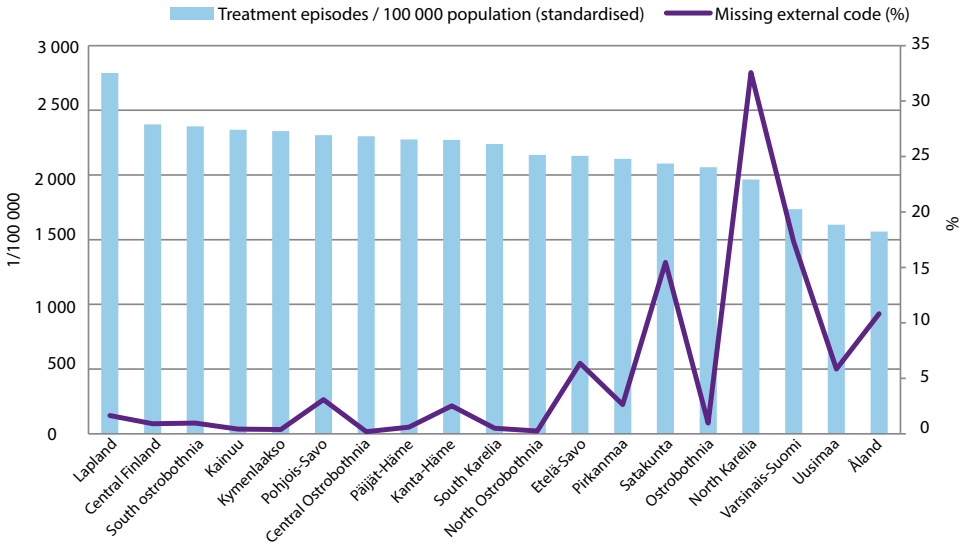

Figure 16. Accidents leading to inpatient treatment in different provinces and proportion (%) of missing data on the external causes of hospitalisation in 2012

Accidents leading to mild injuries

- Finns experience more than one million unintentional injuries annually when including mild injuries
- 72 % of unintentional injuries occur in home and leisure
- Accidents at home and in sports are the leading causes of unintentional injuries
- Mild unintentional injuries treated at home and individual hospital admissions are not necessarily registered in the statistics. Information on such injuries is collected by surveys.

The cause of death statistics and hospitals' care registers encompass only the most serious injuries. The National Victimization Survey, conducted altogether seven times between the years 1980-2009, has gathered data on mild injuries and injuries that are not included in the registers. Unlike statistics on serious injuries, the National Victimization Survey provides a different kind of picture of the injury problem because mild

unintentional injuries due to bruises, cuts or sprains occur to different population in different environments compared to serious injuries.

Finns experienced approximately 1,100,000 unintentional injuries in 2009. Home and leisure time injuries accounted for 72 % of all unintentional injuries. Traffic accidents accounted for 7% and occupational accidents for 21 % of all unintentional injuries. 53 % of the injuries occurred to men and 47 % to women.

Table 1: Accident events which have led to physical disability

Accident type	Accidents
Sports injuries	348 000
Home injuries	321 000
Occupational accidents	230 000
Other accidents	123 000
Traffic accidents	74 000
All	**1 096 000**

A closer examination of the types of injuries indicates the occurrence of different types of injuries among the sexes. Occupational accidents and sports injuries are more common among men (62 % and 61 %), whereas the majority of home and other leisure injuries (55 % and 66 %) occurred to women.

There were also differences in injuries among different age groups, for example, younger age groups experienced the highest levels of sports injuries and traffic accidents. Annually, over 400,000 visits to doctors were due to unintentional injuries. The total number of unintentional injuries has remained high all through the 2000s.

According to the survey conducted in 2009, 321,000 unintentional injuries in home occurred during the year for population aged 15 years and older. This accounts for 29 % of all the unintentional injuries. 270,000 people were victims of home injuries which accounts for approximately 6.4 % of the population aged 15 years or older. The number of home injuries has almost doubled during the past 25 years, since the first Victimization Survey. Activities most commonly leading to injuries included preparing food, different maintenance and repair works and other moving around at home.

Table 2: Activities leading to home injuries

Activity leading to injury	Injuries
Cooking	65 000
Maintenance, repair and construction work outdoors	50 000
Heating, maintenance and repair work indoors	29 000
Cleaning, laundry, clothing maintenance	23 000
Hobbies	19 000
Sauna and personal hygiene	18 000
Other moving around at home	63 000
Other past time activities	54 000

Sports injuries are evidently the most common type of unintentional injuries. Finns aged 15 years and older experienced almost 350,000 sports injuries, which accounted for 32 % of all the unintentional injuries. Males experienced 62 % of the sports injuries. The total number of sports injuries has increased by approximately 1.5 times since the first Victimization Surveys during the 1980s.

During 2009, the population aged 15 years and older experienced approximately 230,000 occupational accidents (i.e. injuries at work, injuries on the way to work or injuries during employment at home). Males experienced 62 % of the occupational accidents, whereas 38 % of this type of accidents occurred to females. Since the year 2000, the number of women's occupational accidents has been 10 %-points higher than in the previous surveys.

Alcohol and injuries

- A little less than every third fatal injury occurs under the influence of alcohol
- Half of the alcohol-related fatal injuries are due to poisonings and half are due to other injuries
- Approximately half of the patients admitted to emergency departments during the weekend nights are under the influence of alcohol
- Alcohol-related fatal injuries increased directly after cutting the tax on alcohol, following a decrease in deaths after a few years due to tax increases

Almost every third fatal injury occurs under the influence of alcohol. Approximately half of these injuries are alcohol poisonings and the other half are due to other kind

of alcohol-related injuries. The incidence of alcohol-related injuries is substantially higher among men than among women. The number of alcohol-related fatal injuries increased in particular after cutting the alcohol tax in 2004, which resulted in an increase in alcohol poisonings by 100 to 150 cases per year. The fatal injuries due to other injuries also increased by 50 cases annually but decreased shortly after. Between the years 2008 and 2011, the situation has however improved and the number of fatal injuries due to poisonings has decreased. The changes in numbers have been more pronounced among men: approximately 300 deaths less occurred during 2011 in comparison to 2006. The relative changes among women have also been considerable as the number of alcohol poisonings among women was almost halved during this period.

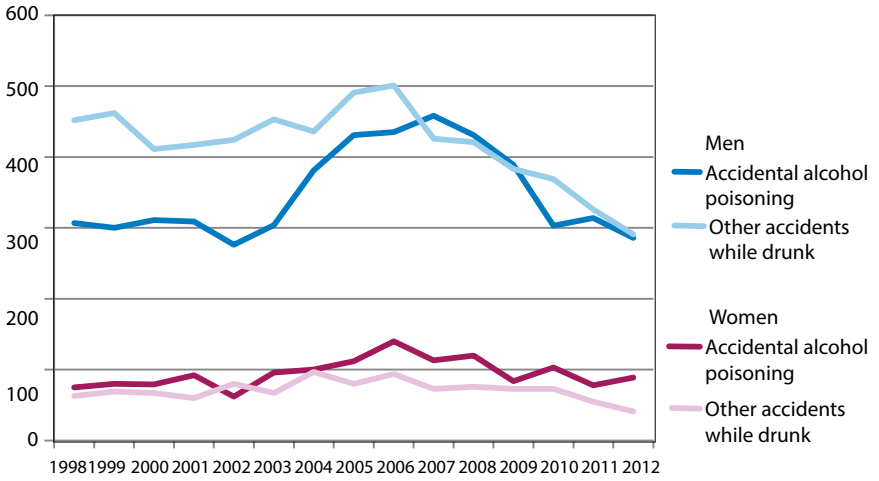

Figure 17. Alcohol-related fatal injuries among men and women between 1998 and 2012.

Figure 18. Alcohol consumption per capita and alcohol related injury deaths between 1998 and 2012.

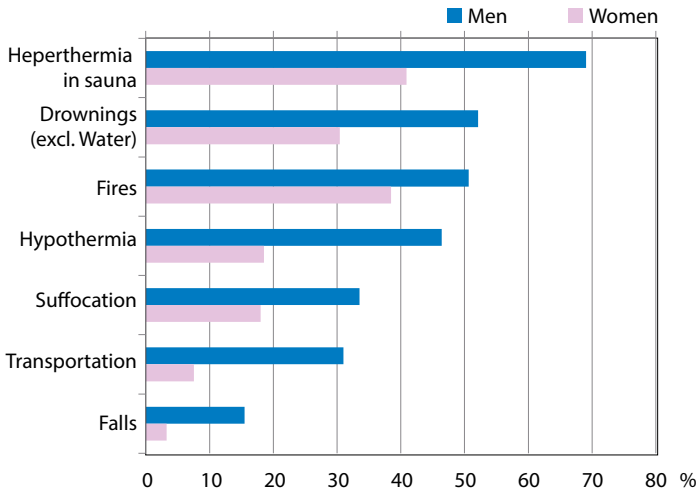

Figure 19. Percentage of intoxicated persons in fatalities from some types of accidents in 2009-2012.

The incidence of alcohol-related deaths tends to vary between different age-groups. Alcohol-related injury deaths are rare among children under the age of 15 but as the consumption of alcohol increases with the age so do deaths. The highest number of alcohol-related injury deaths occurs around the ages from 45 to 64 years. -The incidence of all other alcohol-related injuries than poisonings remains quite stable across the age groups. Fatal alcohol poisonings occur rarely to population under the age of thirty years. The majority of fatal alcohol poisonings occur to population aged 45 to 64 years, and more than half of their accidental deaths are alcohol-related.

Falls

- Falling and tumbling cause one third of unintentional injury deaths and almost half of the injuries resulting in hospitalisation
- The risk of falling increases and its consequences are more serious in older people
- Fall-related deaths of women above 75 years of age account for more than half of all unintentional injury deaths among women

Falls are the leading cause of unintentional injury deaths and hospitalisations. In statistics falls on the level are difficult to separate from the falls from high levels. Most of these cases however refer to falls on the same level (i.e. floor, street) or falling down

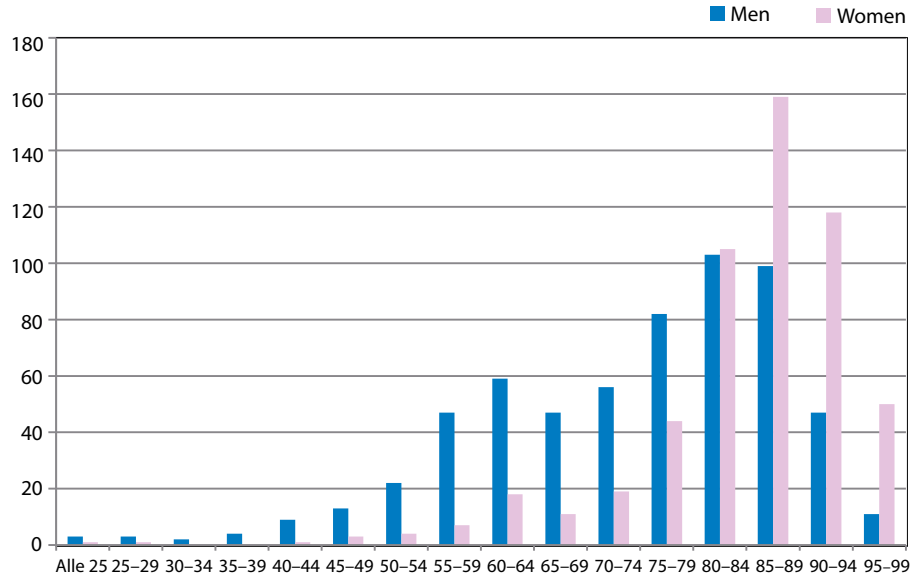

Figure 20. Deaths due to falls by age and sex in 2012

from low level, less than one meter high, to another (e.g. bed). The proportion of falls from high level is relatively low compared to the proportion of falls on the same level. From now on all these cases will be referred to as falls.

Even more than every third unintentional injury death and half of the injuries resulting in inpatient treatment are due falls. Annually, falls are responsible for between 600 and 700 deaths among men and between 500 and 600 deaths among women. Older age groups experience the highest numbers of fall-related injury deaths. The number of fall-related fatal injuries increases among men from the age of 40 years onwards, whereas women's fall-related fatal injuries mostly occur in older age groups. Among women, 93 % of all fall-related deaths occur after the age of 75, while in men 65 % of fall-related deaths occur after this age.

In 2010, 67,000 hospitalisations were caused by falls. More than half of these occurred to women. Hospitalisations have increased by 10 % since the year 2000, which is mainly due to the greater number of hospitalisations among women. Approximately half of the treatment episodes due to falls occur to people over 70 years. Half of the treatment episodes occur to population aged over 55 years for men and 75 years and older for women.

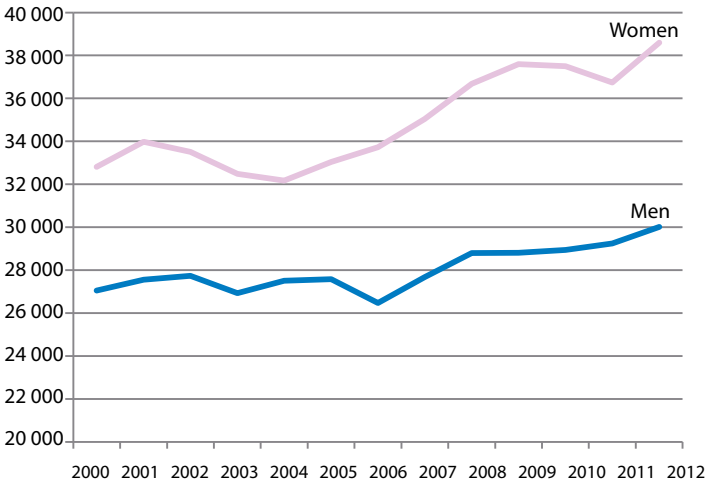

Figure 21.Treatment periods due to falls by sex in 2000–2012

Unintentional injuries among children and youth

- In recent decades, unintentional injury deaths among children under 15 have decreased substantially
- Unintentional injuries are the leading cause of death among children and adolescents
- Especially traffic accidents and poisonings cause many deaths among adolescents

Accidents and other external causes (e.g. intentional self-harm, homicides and events of undetermined intent) are the leading causes of death among children and youth after the first year after birth (Figure 14). Among children and adolescents the proportion of fatal injuries of all deaths is bigger than in other age groups since the overall mortality among children and adolescents is low. The highest rates of unintentional injury deaths occur in both sexes at the age of 15–19 years; at that age 47 % of all deaths among males and 35 % among females are due to unintentional injuries.

While injuries are the cause of one third of all mortality, the proportion of suicides increases rapidly among adolescent at the age of 15–24. More than 75 % of all deaths are caused by external causes among youths aged 15–24 years.

The most common types of accidents leading to death among children aged less than 15 years are traffic accidents, drownings and other suffocations and strangulations. Among 15–24-year-old adolescents the most common types of fatal injuries are traffic accidents and poisonings. The major proportion (87 %) of fatal injuries before the

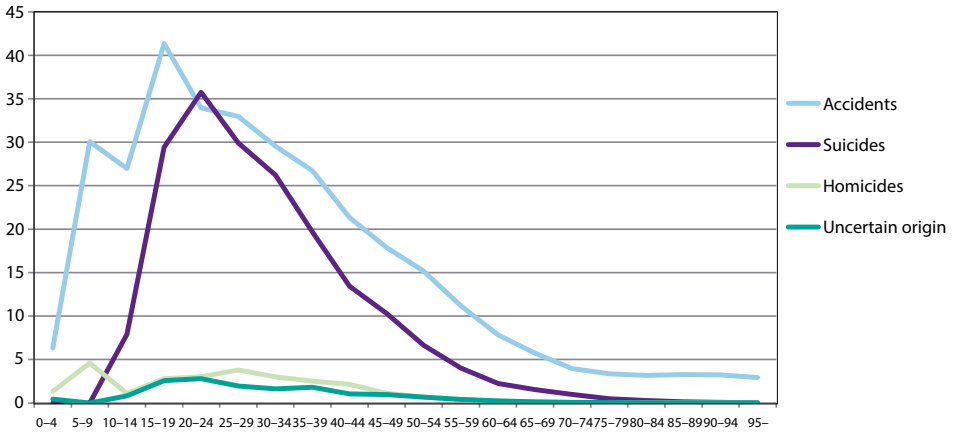

Figure 22. Proportion (%) of external causes of death by 5 years age groups

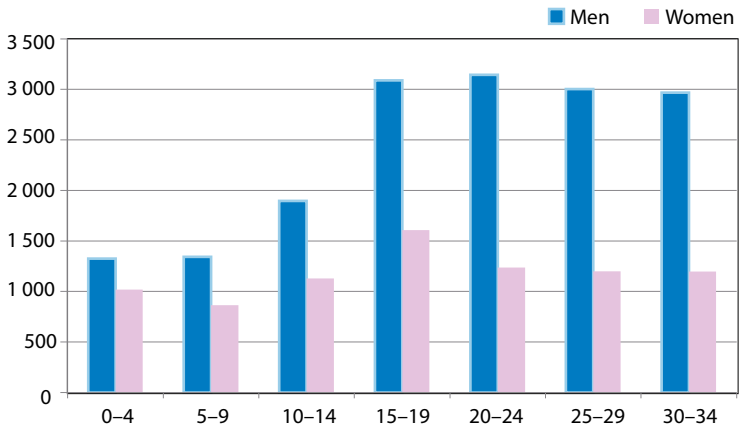

Figure 23. Injuries and poisonings leading to hospitalisation among under 35-year-olds by sex in 2012

age of 25 years occurs among adolescents aged 15–24 years. Nevertheless, unintentional injury deaths among children under the age of 15 have decreased clearly during the first decade of the 2000s.

There has not been any significant change during the last 10 years among children and adolescents considering the number of hospitalisations due to unintentional injuries. Injuries leading to hospitalisation are most often caused by falls. Traffic accidents are the second most common reason for hospitalisation among children and adolescents above seven years. The second most common cause of hospitalisation among children under seven years is injuries due to inanimate mechanical energy (such as colliding), injuries due to scalding and contact with hot objects. Half of the injuries that are treated in inpatient care occur to children under school age in the home environment, and even 70% of the injuries occurring to children under the age of three. As children grow

up they start to spend more time in different kind of environments. The highest number of injuries requiring inpatient treatment among primary school aged children and older adolescents are experienced in leisure time, outside home.

Suicides and violence

- Almost one thousand people die as a result of suicides annually even though the number of suicides has been decreasing over the past 20 years
- Alcohol and drugs are often involved in suicides, homicides and deaths of undetermined causes

In addition to unintentional injuries, more than one thousand people die annually as a result of other external causes. Suicides are the leading cause of these deaths, due to which almost one thousand persons die every year. The number has decreased significantly for the last ten years while suicide deaths have decreased by almost 200 cases annually. Around one hundred people die every year as a victim of homicide. In around one hundred deaths every year it is not possible to reliably determine whether the death was unintentional or intentional. The number of cases of undetermined intent has remained roughly the same during the last years. In homicides the victim was intoxicated in half of the cases. In suicides the victim was intoxicated in every fourth case.

Suicides are three times as common among men as among women, and the number of suicides is higher for men than women in all 5 years age groups.

Together, deaths during home and leisure-activities (64 %) and suicides (24 %) account for almost 90 % of all accidental and violence-related deaths (Figure 26). Traffic accidents (7%), accidents at work (1 %), homicides (2 %) or deaths of unknown origin (2%) account for a noticeably smaller share.

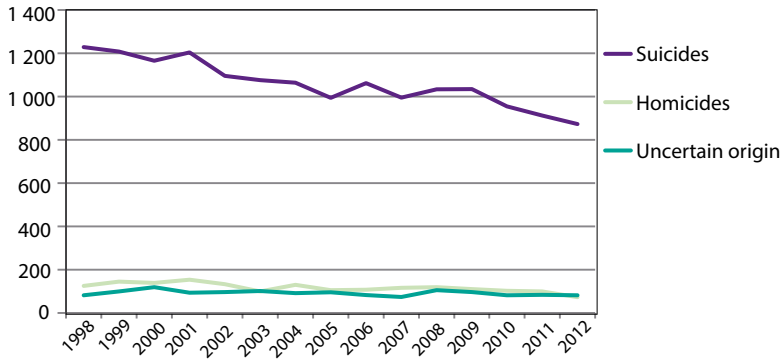

Figure 24. Suicides, homicides and undetermined intent deaths in 1998–2012.

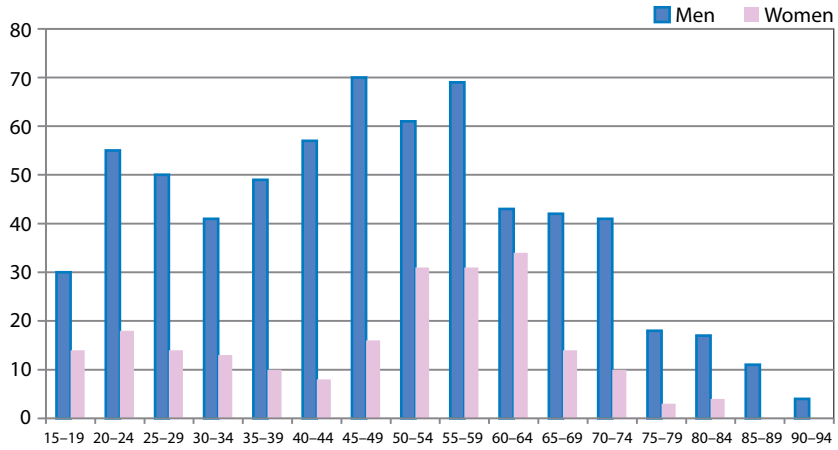

Figure 25. Suicides by age and sex in 2012

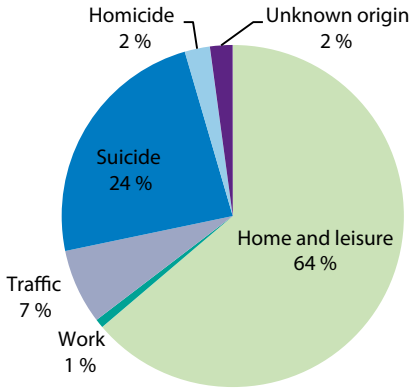

Figure 26. Accidental and violence-related deaths in 2010–2012 by cause.

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10 The costs of injuries in Finland

Antti Impinen

The costs of accidents, both direct and indirect ones, amount to millions of euros. The direct costs of accidents refer to the costs that add to the workload of or cause a financial loss to some party. They include the medical treatment of injuries, the work of the police and rescue services, compensation paid out because of injuries and funds spent on work to prevent accidents. Indirect costs of accidents, on the other hand, refer to potential financial losses caused by the accident that do not at the time require money or a work input. For example, a death caused by an injury results in indirect costs in that the person's work input is no longer available, which translates as a loss of production.

Inpatient treatment and outpatient surgery

In 2011, injuries and poisonings requiring overnight hospitalisation or outpatient surgery were diagnosed in connection with 146,000 hospital treatment episodes. Of these episodes, 97,000 were in consequence of home and leisure accident injuries. In another 18,000 episodes, the diagnosis was an injury or a poisoning in which the origin or cause had not been recorded. Consequently, home and leisure accident injuries resulted in at minimum 97,000 and at maximum 115,000 treatment episodes in 2011. The total share of home and leisure accident injuries in all injuries and poisonings has been estimated at 64.1–75.5 % of all hospital treatment episodes, and this figure will be used as the basis for estimating the costs of home and leisure accident injuries below.

In 2011, the total cost of injuries and poisonings requiring hospitalisation was EUR 691 million. Home and leisure accident injuries accounted for EUR 453–532 million of this sum.

Outpatient treatment

The cost of somatic outpatient treatment in specialised medical care was EUR 1,754 million in 2011. No accurate data on the costs of outpatient care by a certain diagnosis is available, and the cost calculation is based on the type and specialist field of the visit. Of the over six million specialised care outpatient visits in 2010, 334,000 were the result of injuries and poisonings. If we further estimate the number of home and leisure accidents at 215,000–253,000, they would account for 3.4–4.0 % of all visits. The cost of home and leisure accidents based on their proportionate share would thus account for EUR 60–71 million in the costs of specialised care outpatient visits.

The costs of somatic outpatient treatment in primary health care (excl. dental care) totalled EUR 1,914 million in 2011. The causes of outpatient visits were recorded in a fraction of the cases only, which also means that the division of costs cannot be reliably estimated. Visits to health centres recorded at outpatient clinics in 2011 amounted to over 11 million, while the reason for the visit was only recorded for 3 million visits. Of these 3 million visits, the reason for 287,000 visits was an injury or a poisoning, representing some 2.6 % of all visits and 10 % of all recorded visits. The share of home and leisure accident injuries would thus be 184,000–217,000 visits, or at minimum 1.6 % and at maximum 7.4% of the visits. Consequently, the share of home and leisure accident injuries would thus be EUR 31–142 million of the costs of outpatient primary care.

The costs of home and leisure accident injuries treated in outpatient care totalled EUR 91-213 million in 2011.

Sickness allowance

The Social Insurance Institution (KELA) pays out sickness allowance to compensate for the lack of earnings caused by a disability lasting for less than a year. The reasons for the disability are recorded at the level of main diagnosis, allowing for periods of disability caused by injuries and poisoning to be singled out. Every year, some 50,000 –55,000 people receive sickness allowance due to injuries and poisonings. The number of lost working days is approx. 2,000,000 annually, corresponding to some 5,500 person-years. The cost of these working days is increasing each year; in 2012, the figure was EUR 134 million.

The Social Insurance Institution's reports specify the medical diagnosis that caused the disability, for example an injury or a poisoning, but not the external causes of the injuries and poisonings. If we assume that the division of causes is the same as for hospitalisations, home and leisure accident injuries account for 64–76 % of sickness allowanc-

es paid out. Consequently, the cost of sickness allowances paid out due to home and leisure accidents was EUR 86–101 million in 2011.

Disability pensions and benefits

If an illness results in a short-term disability of less than 300 working days, the compensation is paid as sickness allowance. After the period for sickness allowance expires, the person may apply for a disability pension for the subsequent period. Similarly to sickness allowance, disability pensions are also recorded in the statistics by the main diagnosis that caused the retirement. Every year, a disability pension due to an injury or a poisoning is paid to some 5,500 – 5,600 persons. The cost of these pensions is some EUR 21–22 million a year, representing approx. 3 % of all disability pensions. The most common reason for receiving a disability pension is a head injury.

In addition to the disability pension, the Social Insurance Institution pays disability benefits to persons with long-term illnesses or disabilities to support independent life and rehabilitation. These include disability allowances for children and adults and a care allowance for pensioners. Disability allowance for an adult or a child is paid to some 300 people in total, whereas over 6,000 persons are receiving a care allowance for pensioners. Slightly less than one million euros of disability allowance, and some EUR 11 million of care allowance for pensioners are paid out each year, and these allowance forms account for almost 3 % of all disability benefits. The most common injury-related reasons for receiving a care allowance for a pensioner are a fractured hip and a head injury.

Disability pensions and benefits paid out in 2012 totalled EUR 33 million. The estimated share of home and leisure accidents in this figure is approx. EUR 21–25 million.

Rescue services

The duties of the rescue services include not only putting out fires but also many tasks related to accidents, rescuing and executive assistance. Operative activities that can be categorised as home and leisure accidents may include putting out fires in buildings and elsewhere, preventing fire risks in buildings, and rescue and emergency response missions. The operative activities of the rescue services only account for a part of the costs, however, as maintaining preparedness is a major cost item. Every year, the rescue services complete some 100,000 operative missions. Estimated by accident type, approx. 11% of these are believed to involve home and leisure accidents.

In 2011, the rescue services' budget for the item 'Rescue, accident prevention and preparedness' was EUR 384 million. A share of 11% of these costs would be EUR 42 million, if we assume that this share accounts for home and leisure accidents and their prevention.

Material losses

Varying criteria are applied to assessing the material losses caused by accidents. In case of a fire, the director of the rescue services subjectively estimates the extent of losses caused by the fire. In 2011, the material losses caused by fires categorised as home and leisure accidents were estimated at EUR 57.1 million for fires in buildings and EUR 1.6 million for other fires.

Police activities

In their mission statement, the police say they stress "...preventing and reducing the number of crimes, public order offences and accidents and safeguarding and improving our service capability. In addition, the police contribute to promoting positive attitudes towards safety and security and a safe living environment for the citizens."

Even if the major part of police work related to accidents and injuries is in the field of traffic surveillance, it also includes preventing and investigating accidents. In case of serious accidents, the police may carry out an investigation to establish whether the incident was an accident or a deliberate act, and in case of an accident, questions of liability may also have to be addressed.

The police do not keep statistics on the share of accidents in their tasks, which makes it difficult to estimate the share of home and leisure accidents in their total workload and costs. In a study of the costs of accidents from 2003, it was estimated that 5–10 % of the costs related to public order, safety and security and emergency response duties in police activities were relevant to home and leisure accidents or their prevention, equalling EUR 11.6–23.1 million. Similarly, the cost of surveillance and emergency response activities carried out by the police in 2011 was EUR 320.6 million. If we assume that the share of home and leisure accidents is 5–10 %, the police incurred costs amounting to EUR 16.0–32.1 million as a result of these accidents.

Costs of fatalities

When a person dies, his or her current and potential future work input are no longer available. If we limit the examination of the work input to one year, the impact of accidental deaths is not particularly great. We must remember, however, that the impact on future years is cumulative, as the person's entire future work input is unavailable. Accident injuries are a significant cause of death in young age groups in particular, and these injuries thus result in great losses of future working years.

This calculation treats persons aged 15–64 as potential labour force and assumes that the loss of person-years concerns this age range. Any period of study or unemployment, retirement or disability are taken into account by using the employment rate of the age group in question as a coefficient for the person-years. The share of the employed in the age group 15–64 years in Finland is some 70 %. The lost person-years are calculated by taking the losses caused by deaths of persons aged 15–64 during the year and multiplying this figure by the employment rate of the relevant age group. The loss of production figure is obtained by multiplying the person-years calculated above by the labour costs of a single employee incurred by the employer.

In 2011, a total of 2,447 persons lost their lives in home and leisure accidents. The number of potential person-years lost was 17,587. Estimated by the average deflated labour costs, the financial losses were EUR 442 million. Even if these costs are only incurred by the year 2076, we must take into account the fact that in 2011, the loss of work input caused by accidental deaths in previous years will already have materialised.

Summary: total costs

In total, the direct costs of home and leisure accident injuries were estimated at EUR 769 –1,004 million a year. The greatest costs are incurred for hospital treatment episodes, i.e. hospitalisation and outpatient surgery. In indirect costs was included the loss of work input caused by deaths, which was estimated at EUR 442 million a year. No other monetary value was imputed to fatalities. The total costs were estimated to be EUR 1.2–1.4 billion.

Table 3:

	Estimated costs, EUR million	
	Minimum	Maximum
Total	1211.0	1446.1
Total of direct costs	769.1	1004.2
Treatment in an inpatient ward	453.3	532.0
Outpatient treatment		
- specialised medical care	60.2	70.8
- primary health care	31.3	142.0
Sickness allowance	85.9	101.2
Pensions and benefits	21.3	25.1
Rescue services	42.2	42.2
- material losses	58.8	58.8
Police activities	16.0	32.1
Total of indirect costs	441.9	441.9
Loss of production due to death	441.9	441.9

We should note that different formula for calculating the value of a lost life (other than the concrete loss of production) have also been developed. Calculations of this kind are problematic, however, as the values are not based on actual financial losses. A few different examinations are discussed below where the value of a lost life per se is taken into account.

Funds spent on accident prevention

It is difficult to set down a clear-cut definition of work aiming to reduce the number of home and leisure accident injuries. In a broad sense, many different parties carry out work to prevent accidents, but the total of funds directly earmarked for preventing home and leisure accidents has been estimated at some EUR 1.0–1.2 million a year.

Comparison with other studies of costs

Costs of accident injuries in 2001

A previous study looking at the costs of accident injuries in 2001 was drawn up in 2003. The estimated cost structure of injuries was divided into direct and indirect costs similarly to this report. The direct costs in 2001 were estimated at EUR 460–549 mil-

lion, which was EUR 308–396 million less than in this report. The value of lost production was put at EUR 236–262 million, which was EUR 200 million less than in this report. The greatest differences between the two studies lie in estimating the theoretical value of a lost life; a decision was made to exclude this value in the present study. In 2001, these costs were estimated to be EUR 1.8–3.2 billion, which figure was not included in the present study. If we include these costs, we can theoretically assume that the costs in 2011 were EUR 3.0–5.6 billion.

Costs of road accidents

The Finnish Transport Agency produces an annual estimate of the costs of personal injuries caused by road accidents. The costs of the accidents have been calculated by a method based on amounts paid by society. The costs of a fatality were estimated to be EUR 2.4 million, and those of an accident resulting in injuries EUR 351,000 on average. The costs incurred from road accidents resulting in personal injuries in 2010 totalled some EUR 1.6 billion, of which the share of fatalities was EUR 0.5 billion.

If we apply the same method to deaths caused by home and leisure accident injuries in 2011, the cost of accidental deaths alone is EUR 5.7 billion a year, which cannot be considered a realistic estimate. In this case, the total costs of home and leisure accidents would be EUR 6.9–7.1 billion, which would mainly consist of the value of lost lives.

Cost of cancers

In a study that assessed the costs of cancer diseases, it was calculated that costs totalling EUR 528 million were incurred for cancers in 2004. The cost estimate for 2015 varied from EUR 850 – 1,556 million depending on the assessment. The figures for the costs incurred for cancers did not contain the potential losses of production due to deaths.

Costs of harmful effects caused by alcohol and drugs use

The costs of the harmful effects of alcohol in 2010 were estimated at EUR 1.2–1.4 billion, and those of drugs at EUR 325–380 billion. These figures also include costs of accidents.

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Appendix 1. Contact information related to the Safe Community network

WHO Collaborating Centre on Community Safety Promotion (WHO CCCSP)

- organises annual international and regional conferences
- organises training sessions on safety communication and accident prevention
- publishes a newsletter once a month http://www.ki.se/csp/who_newslet- ters_ en.htm
- supports activities of local networks
- communicates information http://www.ki.se/csp/who_lectures_en.htm
- studies accidents and their prevention.

Centre's contact information:

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Regional Networks for Safe Communities (RNSC)

- regional activities organised on different continents
- regional networks on different continents, such as ESCON in Europe

European Network for Safe Communities (ESCON)

- supports accident prevention by providing information and assisting in implementing local programmes
- liaises with other accident organisations and networks in the European area (WHO and EuroSafe)
- the offices are located in the Czech Republic, Norway, Iceland, Austria and Macedonia
- upon obtaining the Safe Community designation, a community also becomes a member of the RNSC and ESCON. http://www.safecomeurope.com/2011

SP/IP (Safety Promotion / Injury Prevention)

- an acronym used for measures to promote safety

If a community does not have the prerequisites to join the network as a complete entity, an individual smaller unit, such as hospital, can apply for the designation to ensure the quality of safety activities.

For more information, see Safe Elderly

For additional information

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